



Amendment No. 1
of
Contract No. MA 6300 NA190000095
For
Aquatic Macrophyte Restoration Project
between
University Of North Texas
and the
City of Austin

- 1.0 The City hereby exercises the extension option for the above-referenced contract. Effective January 1, 2020, to December 31, 2020. One option remains.
- 2.0 The total contract amount is increased by \$50,000.00 for the extension option period. The total Contract authorization is recapped below:

Term	Action Amount	Total Contract Amount
Basic Term: 01/01/2019 – 12/31/2019	\$50,000.00	\$50,000.00
Amendment No. 1: Option 1 01/01/2020 – 12/31/2020	\$50,000.00	\$100,000.00

- 3.0 MBE/WBE goals were not established for this contract.
- 4.0 By signing this Amendment, the Contractor certifies that the Contractor and its principals are not currently suspended or debarred from doing business with the Federal Government, as indicated by the General Services Administration (GSA) List of Parties Excluded from Federal Procurement and Non-Procurement Programs, the State of Texas, or the City of Austin.
- 5.0 All other terms and conditions remain the same.

BY THE SIGNATURES affixed below, this Amendment is hereby incorporated into and made a part of the above-referenced contract.

Signature & Date:

Printed Name: Michael R. Adkins
Authorized Representative

12/20/2019

Signature & Date:

John Hilbun 12/26/19
John Hilbun, Contract Mgmt Specialist IV
City of Austin
Purchasing Office

University of North Texas
1155 Union Circle
Denton, TX 76203
sam.atkinson@unt.edu
(940) 565-2694

**CONTRACT BETWEEN THE CITY OF AUSTIN
AND
UNIVERSITY OF NORTH TEXAS
FOR
AQUATIC MACROPHYTE RESTORATION PROJECT
MA 6300 NA190000095**

This Contract is made by and between the City of Austin ("City"), a home-rule municipality incorporated by the State of Texas, and University of North Texas ("Contractor"), having offices at 1155 Union Circle, Denton, TX 76203.

SECTION 1. GRANT OF AUTHORITY, SERVICES AND DUTIES

1.1 Engagement of the Contractor. Subject to the general supervision and control of the City and subject to the provisions of the Terms and Conditions contained herein, the Contractor is engaged to provide the services set forth in Section 2, Scope of Work.

1.2 Responsibilities of the Contractor. The Contractor shall provide all technical and professional expertise, knowledge, management, and other resources required for accomplishing all aspects of the tasks and associated activities identified in the Scope of Work. In the event that the need arises for the Contractor to perform services beyond those stated in the Scope of Work, the Contractor and the City shall negotiate mutually agreeable terms and compensation for completing the additional services.

1.3 Responsibilities of the City. The City's Contract Manager will be responsible for exercising general oversight of the Contractor's activities in completing the Scope of Work. Specifically, the Contract Manager will represent the City's interests in resolving day-to-day issues that may arise during the term of this Contract, shall participate regularly in conference calls or meetings for status reporting, shall promptly review any written reports submitted by the Contractor, and shall approve all invoices for payment, as appropriate. The City's Contract Manager shall give the Contractor timely feedback on the acceptability of progress and task reports.

1.4 Designation of Key Personnel. The Contractor's Contract Manager for this engagement shall be Sam Atkinson, Phone: 940-565-2694, Email Address: sam.atkinson@unt.edu. The City's Contract Manager for the engagement shall be Josephine Archer, Phone: (512) 974-9735, Email Address: Josephine.archer@austintexas.gov. The City and the Contractor resolve to keep the same key personnel assigned to this engagement throughout its term. In the event that it becomes necessary for the Contractor to replace any key personnel, the replacement will be an individual having equivalent experience and competence in executing projects such as the one described herein. Additionally, the Contractor will promptly notify the City Contract Manager and obtain approval for the replacement. Such approval shall not be unreasonably withheld.

SECTION 2. SCOPE OF WORK

2.1 Contractor's Obligations. The Contractor shall fully and timely provide all deliverables described herein and in the Contractor's Offer in strict accordance with the terms, covenants, and conditions of the Contract and all applicable Federal, State, and local laws, rules, and regulations.

2.1.1 Native aquatic plant establishment and protection: Monitoring and maintenance are required for long-term establishment of founder colonies and is being continued past the installation/expansion phases. Because of the success provided by larger pens, it is proposed that in addition to monitoring and replanting in existing sites, additional pens should be constructed at remaining appropriate sites in each reservoir. These pens will serve to increase founder colony area coverage and propagule (seeds, fragments, etc.) production. Founder colony productivity should increase to levels needed to overcome natural establishment limitations in both lakes. In turn, this would hasten spread to unprotected areas in both reservoirs.

2.1.1.1 Plantings of emergence species (primarily water willow) outside of vegetation pens for shoreline protection at the founder colony sites will be expanded to all appropriate sites (typically sandy banks) as a mechanism for minimizing shoreline erosion on Lake Austin

2.1.2 Riparian plantings: The City has requested assistance with additional plantings of riparian areas in Lady Bird Lake. Establishing desirable native plants in areas in which other activities have reduced or prevented plant community development. US Army Corps of Engineers' Lewisville Aquatic Ecosystem Research Facility (LAERF) will provide specific plans for each area to the City for approval before implementing each planting.

2.1.3 Macroinvertebrate study: With the persistence of aquatic vegetation in large pens over the past 2-4 years, the City has requested a study of benefits provided by the presence of vegetation relative to areas without. Specifically, an important ecosystem component, benthic invertebrates, will be sampled, identified, quantified, and compared between vegetated sites and nearby un-vegetated areas. Aquatic vegetation has been shown to support greater invertebrate biomass relative to unvegetated areas in other aquatic systems. The City would like to confirm that our vegetation pens are providing similar ecosystem benefits. By comparing pens that have been vegetated for different periods of time (1-4 year continuously) and relative to areas with no plants, we can describe invertebrate community dynamics (e.g., diversity, density, succession)

- 2.2 Tasks.** In order to accomplish the work described herein, the Contractor shall perform the following task as outlined in Exhibit A - Aquatic Macrophyte Restoration Project Proposal:

Task 12. Founder colony maintenance and improvements: macroinvertebrate study (2019-2021).

Objectives: Continue monitoring aquatic plant founder colonies. Install additional pens where appropriate. Expand revegetation efforts where non-native species are removed and along erosional shorelines. Survey benthic macroinvertebrates and draft report of the findings.

Funding: FY2019 (1 Jan 2019 – 31 December 2019) - \$50,000
FY2020 (1 Jan 2020 – 31 December 2020) - \$50,000
FY2021 (1 Jan 2021 – 31 December 2021) - \$50,000

SECTION 3. COMPENSATION

- 3.1 Contract Amount.** The Contractor shall be paid a total Not-to-Exceed amount of \$50,000.00 for fees and expenses for the initial Contract term and \$50,000.00 for each extension option for a total amount Not-to-Exceed \$150,000.00 for fees and expenses.

3.2 Invoices.

3.2.1 Invoices shall contain a unique invoice number, the purchase order or delivery order number and the master agreement number if applicable, the Department's Name, and the name of the point of contact for the Department. Invoices shall be itemized. The Contractor's name and, if applicable, the tax identification number on the invoice must exactly match the information in the Contractor's registration with the City. Unless otherwise instructed in writing, the City may rely on the remittance address specified on the Contractor's invoice. Invoices received without all required information cannot be processed and will be returned to the Contractor. Invoices shall be mailed to the below address:

	City of Austin
Department	Watershed Protection – Billing
Attn:	Josephine Archer
Address	P.O. Box 1088
City, State, Zip Code	Austin TX 78767
Email Address	WPDinvoices@austintexas.gov

3.2.2 Invoices for labor must be in sufficient detail and must be accompanied by supporting documents required for payment.

3.2.3 Unless otherwise expressly authorized in the Contract, the Contractor shall pass through all Subcontract and other authorized expenses at actual cost without markup.

3.2.4 Federal excise taxes, State taxes, or City sales taxes must not be included in the invoiced amount. The City will furnish a tax exemption certificate upon request.

3.3 Payment.

3.3.1 All proper invoices received by the City will be paid within thirty (30) calendar days of the City's receipt of the invoice.

3.3.2 If payment is not timely made, (per this paragraph), interest shall accrue on the unpaid balance at the lesser of the rate specified in Texas Government Code Section 2251.025 or the maximum lawful rate; except, if payment is not timely made for a reason for which the City may withhold payment hereunder, interest shall not accrue until ten (10) calendar days after the grounds for withholding payment have been resolved.

3.3.3 The City may withhold or off set the entire payment or part of any payment otherwise due the Contractor to such extent as may be necessary on account of:

3.3.3.1 failure of the Contractor to pay Subcontractors, or for labor, materials or equipment;

3.3.3.2 damage to the property of the City or the City's agents, employees or contractors, which is not covered by insurance required to be provided by the Contractor;

3.3.3.3 failure of the Contractor to submit proper invoices with all required attachments and supporting documentation; or

3.3.3.4 failure of the Contractor to comply with any material provision of the Contract Documents.

3.3.4 Notice is hereby given of Article VIII, Section 1 of the Austin City Charter which prohibits the payment of any money to any person, firm or corporation who is in arrears to the City for taxes, and of §2-8-3 of the Austin City Code concerning the right of the City to offset indebtedness owed the City.

3.3.5 Payment will be made by check unless the parties mutually agree to payment by credit card or electronic transfer of funds. The Contractor agrees that there shall be no additional charges, surcharges, or penalties to the City for payments made by credit card or electronic transfer of funds.

3.4 **Retainage.** The City reserves the right to withhold a ten percent (10%) retainage until completion of all work required by the Contract. The Contractor's invoice shall indicate the amount due, less the retainage. Upon final acceptance of the work, the Contractor shall submit an invoice for the retainage to the City and payment will be made as specified in the Contract. Payment of the retainage by the City shall not constitute nor be deemed a waiver or release by the City of any of its rights and remedies against the Contractor for recovery of amounts improperly invoiced or for defective, incomplete or non-conforming work under the Contract.

3.5 **Non-Appropriation.** The awarding or continuation of this Contract is dependent upon the availability of funding. The City's payment obligations are payable only and solely from funds Appropriated and available for this Contract. The absence of Appropriated or other lawfully available funds shall render the Contract null and void to the extent funds are not Appropriated or available and any deliverables delivered but unpaid shall be returned to the Contractor. The City shall provide the Contractor written notice of the failure of the City to make an adequate Appropriation for any fiscal year to pay the amounts due under the Contract, or the reduction of any Appropriation to an amount insufficient to permit the City to pay its obligations under the Contract. In the event of non or inadequate appropriation of funds, there will be no penalty nor removal fees charged to the City.

3.6 **Reimbursable Expenses.** Expenses incurred directly in support of completing the work set forth in this Contract are reimbursable to the Contractor within the Contract amount at a markup rate of ten percent (10%).

3.6.1 **Administrative.** The Contractor will be reimbursed for selected administrative expenses incurred directly in support of executing this Contract. Reimbursable administrative expenses include actual charges for long distance telephone calls, facsimile transmissions, reproduction, printing and binding, postage, express delivery and report processing.

3.6.2 **Travel Expenses.** All travel, lodging, and per diem expenses in connection with the Contract for which reimbursement may be claimed by the Contractor under the terms of the Contract will be reviewed against the City's Travel Policy and the current United States General Services Administration Domestic Per Diem Rates (the "Rates") as published and maintained on the Internet at:

<http://www.gsa.gov/portal/category/21287>

No amounts in excess of the Travel Policy or Rates shall be paid. All invoices must be accompanied by copies of itemized receipts (e.g. hotel bills, airline tickets). No reimbursement will be made for expenses not actually incurred. Airline fares in excess of coach or economy will not be reimbursed. Mileage charges may not exceed the amount permitted as a deduction in any year under the Internal Revenue Code or Regulation.

3.7 **Final Payment and Close-Out.**

3.7.1 The making and acceptance of final payment will constitute:

3.7.1.1 a waiver of all claims by the City against the Contractor, except claims (1) which have been previously asserted in writing and not yet settled, (2) arising from defective work appearing after final inspection, (3) arising from failure of the Contractor to comply with the Contract or the terms of any warranty specified herein, (4) arising from the Contractor's continuing obligations under the Contract, including but not limited to indemnity and warranty obligations, or (5) arising under the City's right to audit; and

3.7.1.2 a waiver of all claims by the Contractor against the City other than those previously asserted in writing and not yet settled.

SECTION 4. TERM AND TERMINATION

- 4.1 **Term of Contract.** This Contract shall become effective on the date executed by the City ("Effective Date") and shall remain in effect for a total of 12 months.

4.2.1 Upon expiration of the contract, the Contractor agrees to hold over under the terms and conditions of this Contract for such a period of time as is reasonably necessary for the City to re-solicit and/or complete the deliverables due under this Contract (not exceed 120 calendar days unless mutually agreed on in writing).

- 4.2 The Contract may be extended beyond the initial term for up to two (2) additional 12-month periods at the City's sole option.

4.2.1 If the City exercises any extension option, all terms, conditions, and provisions of the Contract shall remain in effect for that extension period, subject only to any economic price adjustment otherwise allowed under the Contract.

4.2.2 Upon expiration of the initial term or any period of extension, the Contractor agrees to hold over under the terms and conditions of this Contract for such a period of time as is reasonably necessary for the City to re-solicit and/or complete the deliverables due under this Contract (not exceed 120 calendar days unless mutually agreed on in writing).

- 4.3 **Right to Assurance.** Whenever one party to the Contract in good faith has reason to question the other party's intent to perform, demand may be made to the other party for written assurance of the intent to perform. In the event that no assurance is given within the time specified after demand is made, the demanding party may treat this failure as an anticipatory repudiation of the Contract.

- 4.4 **Default.** The Contractor shall be in default under the Contract if the Contractor (a) fails to fully, timely and faithfully perform any of its material obligations under the Contract, (b) fails to provide adequate assurance of performance under the "Right to Assurance" paragraph herein, (c) becomes insolvent or seeks relief under the bankruptcy laws of the United States or (d) makes a material misrepresentation in Contractor's Offer, or in any report or deliverable required to be submitted by Contractor to the City.

- 4.5 **Termination For Cause.** In the event of a default by the Contractor, the City shall have the right to terminate the Contract for cause, by written notice effective ten (10) calendar days, unless otherwise specified, after the date of such notice, unless the Contractor, within such ten (10) day period, cures such default, or provides evidence sufficient to prove to the City's reasonable satisfaction that such default does not, in fact, exist. The City may place Contractor on probation for a specified period of time within which the Contractor must correct any non-compliance issues. Probation shall not normally be for a period of more than nine (9) months, however, it may be for a longer period, not to exceed one (1) year depending on the circumstances. If the City determines the Contractor has failed to perform satisfactorily during the probation period, the City may proceed with suspension. In the event of a default by the Contractor, the City may suspend or debar the Contractor in accordance with the "City of Austin Purchasing Office Probation, Suspension and Debarment Rules for Vendors" and remove the Contractor from the City's vendor list for up to five (5) years and any Offer submitted by the Contractor may be disqualified for up to five (5) years. All rights and remedies under the Contract are cumulative and are not exclusive of any other right or remedy provided by law.

- 4.6 **Termination Without Cause.** Either Party shall have the right to terminate the Contract, in whole or in part, without cause any time upon thirty (30) calendar days prior written notice. Upon receipt of a notice of termination, the Contractor shall promptly cease all further work pursuant to the Contract, with such exceptions, if any, specified in the notice of termination. The City shall pay the Contractor, to the extent of funds Appropriated or otherwise legally available for such purposes, for all goods delivered and services performed, and obligations incurred prior to the date of termination in accordance with the terms hereof.

- 4.7 **Fraud.** Fraudulent statements by the Contractor on any Offer or in any report or deliverable required to be submitted by the Contractor to the City shall be grounds for the termination of the Contract for cause by the City and may result in legal action.

SECTION 5. OTHER DELIVERABLES

5.1 Insurance:

5.1.1 **Commercial General Liability and Workers Compensation Insurance:** Contractor, an agency of the State of Texas, is self-insured for general liability and workers compensation. Contractor will provide a statement of self-insurance upon request.

5.1.2 **Business Automobile Liability Insurance:** The Contractor shall provide coverage for all owned, non-owned and hired vehicles with a minimum combined single limit of \$500,000 per occurrence for bodily injury and property damage. Alternate acceptable limits are \$250,000 bodily injury per person, \$500,000 bodily injury per occurrence and at least \$100,000 property damage liability per accident. The policy shall contain the following endorsements:

5.1.2.1 Waiver of Subrogation, Endorsement CA0444, or equivalent coverage.

5.1.2.2 Thirty (30) calendar days' Notice of Cancellation, Endorsement CA0244, or equivalent coverage.

5.1.2.3 The City of Austin listed as an additional insured, Endorsement CA20489, or equivalent coverage.

5.1.3 **Endorsements:** The specific insurance coverage endorsements specified above, or their equivalents must be provided. In the event that endorsements, which are the equivalent of the required coverage, are proposed to be substituted for the required coverage, copies of the equivalent endorsements must be provided for the City's review and approval.

5.2 Equal Opportunity.

5.2.1 **Equal Employment Opportunity.** No Contractor, or Contractor's agent, shall engage in any discriminatory employment practice as defined in Chapter 5-4 of the City Code. No Offer submitted to the City shall be considered, nor any Purchase Order issued, or any Contract awarded by the City unless the Offeror has executed and filed with the City Purchasing Office a current Non-Discrimination Certification. Non-compliance with Chapter 5-4 of the City Code may result in sanctions, including termination of the contract and the Contractor's suspension or debarment from participation on future City contracts until deemed compliant with Chapter 5-4.

5.2.2 **Americans With Disabilities Act (ADA) Compliance.** No Contractor, or Contractor's agent, shall engage in any discriminatory practice against individuals with disabilities as defined in the ADA, including but not limited to: employment, accessibility to goods and services, reasonable accommodations, and effective communications.

5.3 Delays.

5.3.1 The City may delay scheduled delivery or other due dates by written notice to the Contractor if the City deems it is in its best interest. If such delay causes an increase in the cost of the work under the Contract, the City and the Contractor shall negotiate an equitable adjustment for costs incurred by the Contractor in the Contract price and execute an amendment to the Contract. The Contractor must assert its right to an adjustment within thirty (30) calendar days from the date of receipt of the notice of delay. Failure to agree on any adjusted price shall be handled under the Dispute Resolution process specified herein. However, nothing in this provision shall excuse the Contractor from delaying the delivery as notified.

5.3.2 Neither party shall be liable for any default or delay in the performance of its obligations under this Contract if, while and to the extent such default or delay is caused by acts of God, fire, riots, civil commotion, labor disruptions, sabotage, sovereign conduct, or any other cause beyond the reasonable control of such Party. In the event of default or delay in Contract performance due to any of the foregoing causes, then the time for completion of the services will be extended; provided, however, in such an event, a conference will

be held within three (3) business days to establish a mutually agreeable period of time reasonably necessary to overcome the effect of such failure to perform.

5.4 Ownership and Use of Deliverables.

5.4.1 **Patents.** Title to all inventions and discoveries made solely by Contractor inventors resulting from the work shall reside with Contractor; title to all inventions and discoveries made solely by City inventors resulting from the work shall reside with City; title to all inventions and discoveries made jointly by Contractor and City inventors resulting from the work shall reside jointly with Contractor and City.

5.4.2 **Data and Copyrights.** Title to data (which is defined as including, but not limited to; software, writings, sound recordings, pictorial reproductions, drawings or other graphical representations, reports, blueprints and works of any similar nature, whether or not copyrighted or copyrightable) first produced or composed by Contractor employees in the performance of work under this Agreement shall be the sole and exclusive property of Contractor. Contractor shall have the sole right to determine the disposition of copyrights or other rights resulting from the performance of work; provided that Contractor hereby grants to City a royalty free, perpetual, non-exclusive license to reproduce, modify and use all such data for its own purposes.

5.4.3 **Publication.** Both parties shall be free to publish the results of work under this Agreement. Title to and the right to determine the disposition of any copyrights on publications relating to the performance of the work hereunder shall remain with Contractor, who shall have the sole right to determine the disposition of those copyrights. However, prior to publication, Contractor shall provide to City a thirty (30) day period in which to review proposed publications, identify proprietary or confidential information, and submit comments. Contractor shall not publish or otherwise disclose proprietary or confidential information identified by City and will give full consideration to all comments before publication. Furthermore, upon request of the reviewing party, publication will be deferred for up to thirty (30) additional days for preparation and filing of any patent application which City has the right to file.

5.5 **Rights to Proposal and Contractual Material.** All material submitted by the Contractor to the City shall become property of the City upon receipt. Any portions of such material claimed by the Contractor to be proprietary must be clearly marked as such. Determination of the public nature of the material is subject to the Texas Public Information Act, Chapter 552, Texas Government Code.

5.6 **Publications.** All published material and written reports submitted under the Contract must be originally developed material unless otherwise specifically provided in the Contract. When material not originally developed is included in a report in any form, the source shall be identified.

SECTION 6. WARRANTIES

SECTION 7. MISCELLANEOUS

7.1 **Place and Condition of Work.** The City shall provide the Contractor access to the sites where the Contractor is to perform the services as required in order for the Contractor to perform the services in a timely and efficient manner in accordance with and subject to the applicable security laws, rules, and regulations. The Contractor acknowledges that it has satisfied itself as to the nature of the City's service requirements and specifications, the location and essential characteristics of the work sites, the quality and quantity of materials, equipment, labor and facilities necessary to perform the services, and any other condition or state of fact which could in any way affect performance of the Contractor's obligations under the Contract.

7.2 Workforce.

7.2.1 The Contractor shall employ only orderly and competent workers, skilled in the performance of the services which they will perform under the Contract.

7.2.2 The Contractor, its employees, subcontractors, and subcontractor's employees may not while engaged in participating or responding to a solicitation or while in the course and scope of delivering goods or services under a City of Austin contract or on the City's property:

7.2.2.1 use or possess a firearm, including a concealed handgun that is licensed under state law, except as required by the terms of the Contract; and

7.2.2.2 use or possess alcoholic or other intoxicating beverages, illegal drugs or controlled substances, nor may such workers be intoxicated, or under the influence of alcohol or drugs, on the job.

7.2.3 If the City or the City's representative notifies the Contractor that any worker is incompetent, disorderly or disobedient, has knowingly or repeatedly violated safety regulations, has possessed any firearms, or has possessed or was under the influence of alcohol or drugs on the job, the Contractor shall immediately remove such worker from Contract services, and may not employ such worker again on Contract services without the City's prior written consent.

7.3 **Compliance with Health, Safety, and Environmental Regulations.** The Contractor, its Subcontractors, and their respective employees, shall comply fully with all applicable federal, state, and local health, safety, and environmental laws, ordinances, rules and regulations in the performance of the services, including but not limited to those promulgated by the City and by the Occupational Safety and Health Administration (OSHA). In case of conflict, the most stringent safety requirement shall govern.

7.4 **Significant Event.** The Contractor shall immediately notify the City's Contract Manager of any current or prospective "significant event" on an ongoing basis. All notifications shall be submitted in writing to the Contract Manager. As used in this provision, a "significant event" is any occurrence or anticipated occurrence which might reasonably be expected to have a material effect upon the Contractor's ability to meet its contractual obligations.

7.5 **Audits and Records.**

7.5.1 The Contractor agrees that the representatives of the Office of the City Auditor or other authorized representatives of the City shall have access to, and the right to audit, examine, or reproduce, any and all records of the Contractor related to the performance under this Contract. The Contractor shall retain all such records for a period of three (3) years after final payment on this Contract or until all audit and litigation matters that the City has brought to the attention of the Contractor are resolved, whichever is longer. The Contractor agrees to refund to the City any overpayments disclosed by any such audit.

7.6 **Stop Work Notice.** The City may issue an immediate Stop Work Notice in the event the Contractor is observed performing in a manner that is in violation of Federal, State, or local guidelines, or in a manner that is determined by the City to be unsafe to either life or property. Upon notification, the Contractor will cease all work until notified by the City that the violation or unsafe condition has been corrected. The Contractor shall be liable for all costs incurred by the City as a result of the issuance of such Stop Work Notice.

7.7 **Indemnity.** Contractor and City acknowledge that Contractor is an agency of the State of Texas and City is a political subdivision of the State of Texas. Both are subject to, and comply with, the applicable provisions of the Texas Tort Claims Act, and the remedies authorized therein regarding claims or causes of action that may be asserted by third parties for accident, injury or death. Contractor and City shall each promptly notify the other in writing of any claims or demands that become known against them in relation to or arising out of activities under this Contract. Neither Party shall by reason of this Contract be obligated to defend, assume the cost of defense, hold harmless, or indemnify the other from any liability to third parties or loss of or damage to property, death, or bodily injury arising out of or connected with the work under this Contract.

7.8 **Claims.** If any claim, demand, suit, or other action is asserted against the Contractor which arises under or concerns the Contract, or which could have a material adverse effect on the Contractor's ability to perform thereunder, the Contractor shall give written notice thereof to the City within ten (10) calendar days after receipt of notice by the Contractor. Such notice to the City shall state the date of notification of any such claim, demand, suit, or other action; the names and addresses of the claimant(s); the basis thereof; and the name of each person against whom such claim is being asserted. Such notice shall be delivered personally or by mail and shall be sent to the City and to the Austin City Attorney. Personal delivery to the City Attorney shall be to City Hall, 301 West 2nd Street, 4th Floor, Austin, Texas 78701, and mail delivery shall be to P.O. Box 1088, Austin, Texas 78767.

7.9 **Notices.** Unless otherwise specified, all notices, requests, or other communications required or appropriate to be given under the Contract shall be in writing and shall be deemed delivered three (3) business days after postmarked if sent by U.S. Postal Service Certified or Registered Mail, Return Receipt Requested. Notices delivered by other means shall be deemed delivered upon receipt by the addressee. Routine communications may be made by first class mail, telefax, or other commercially accepted means. Notices to the City and the Contractor shall be addressed as follows:

To the City:

City of Austin, Purchasing Office

ATTN: Josephine Archer, Contract Administrator

P O Box 1088

Austin, TX 78767

To the Contractor:

University of North Texas

ATTN: Myriah Roberts, Contract Analyst

1155 Union Cir #305250

Denton, TX Zip 76203

- 7.10 **Confidentiality.** In order to provide the deliverables to the City, Contractor may require access to certain of the City's and/or its licensors' confidential information (including inventions, employee information, trade secrets, confidential know-how, confidential business information, and other information which the City or its licensors consider confidential) (collectively, "Confidential Information"). Contractor acknowledges and agrees that the Confidential Information is the valuable property of the City and/or its licensors and any unauthorized use, disclosure, dissemination, or other release of the Confidential Information will substantially injure the City and/or its licensors. The Contractor (including its employees, subcontractors, agents, or representatives) agrees that it will maintain the Confidential Information in strict confidence and shall not disclose, disseminate, copy, divulge, recreate, or otherwise use the Confidential Information without the prior written consent of the City or in a manner not expressly permitted under this Contract, unless the Confidential Information is required to be disclosed by law or an order of any court or other governmental authority with proper jurisdiction, provided the Contractor promptly notifies the City before disclosing such information so as to permit the City reasonable time to seek an appropriate protective order. The Contractor agrees to use protective measures no less stringent than the Contractor uses within its own business to protect its own most valuable information, which protective measures shall under all circumstances be at least reasonable measures to ensure the continued confidentiality of the Confidential Information.

Information shall be deemed confidential if so marked in writing or so designated orally or in writing. In case of oral designation, disclosure must be followed by written documentation within thirty (30) days, confirming that the information is confidential information. The Contractor agrees to hold and maintain all confidential information, whether oral or written, in confidence and not disclose to others, not make copies of it, not use it, except as expressly agreed beforehand by the City. This restriction continues for five (5) years from the date of receiving information, and does not apply to any items of information which: (a) are in the public domain at the time of disclosure; or (b) becomes part of the public domain after disclosure by publication or otherwise, other than in violation of the commitment herein; or (c) was in possession of the Contractor at the time of disclosure by the City and was not acquired or received, directly or indirectly, from the City; or (d) was received by the Contractor after the time of disclosure from the City by a third party who did not require it to be held in confidence and who did not acquire it, directly or indirectly, from the City under an obligation of confidence; or (e) is subject to disclosure pursuant to the Texas Public Information Act, currently codified under Texas Government Code Chapter 552.

- 7.11 **Advertising.** The Contractor shall not advertise or publish, without the City's prior consent, the fact that the City has entered into the Contract, except to the extent required by law.
- 7.12 **No Contingent Fees.** The Contractor certifies that no person or selling agency has been employed or retained to solicit or secure the Contract upon any agreement or understanding for commission, percentage, brokerage, or contingent fee, excepting bona fide employees of bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the City shall have the right, in addition to any other remedy available, to cancel the Contract without liability and to deduct from any amounts owed to the Contractor, or otherwise recover, the full amount of such commission, percentage, brokerage or contingent fee.
- 7.13 **Gratuities.** The City may, by written notice to the Contractor, cancel the Contract without liability if it is determined by the City that gratuities were offered or given by the Contractor or any agent or representative of the Contractor to any officer or employee of the City with a view toward securing the Contract or securing favorable treatment with respect to the awarding or amending or the making of any determinations with respect to the performing of such contract. In the event the Contract is canceled by the City pursuant to this provision, the City shall be entitled, in addition to any other rights and remedies, to recover or withhold the amount of the cost incurred by the Contractor in providing such gratuities.

- 7.14 **Prohibition Against Personal Interest in Contracts.** No officer, employee, independent consultant, or elected official of the City who is involved in the development, evaluation, or decision-making process of the performance of any solicitation shall have a financial interest, direct or indirect, in the Contract resulting from that solicitation. Any willful violation of this section shall constitute impropriety in office, and any officer or employee guilty thereof shall be subject to disciplinary action up to and including dismissal. Any violation of this provision, with the knowledge, expressed or implied, of the Contractor shall render the Contract voidable by the City.
- 7.15 **Independent Contractor.** The Contract shall not be construed as creating an employer/employee relationship, a partnership, or a joint venture. The Contractor's services shall be those of an independent contractor. The Contractor agrees and understands that the Contract does not grant any rights or privileges established for employees of the City.
- 7.16 **Assignment-Delegation.** The Contract shall be binding upon and enure to the benefit of the City and the Contractor and their respective successors and assigns, provided however, that no right or interest in the Contract shall be assigned and no obligation shall be delegated by the Contractor without the prior written consent of the City. Any attempted assignment or delegation by the Contractor shall be void unless made in conformity with this paragraph. The Contract is not intended to confer rights or benefits on any person, firm or entity not a party hereto; it being the intention of the parties that there be no third-party beneficiaries to the Contract.
- 7.17 **Waiver.** No claim or right arising out of a breach of the Contract can be discharged in whole or in part by a waiver or renunciation of the claim or right unless the waiver or renunciation is supported by consideration and is in writing signed by the aggrieved party. No waiver by either the Contractor or the City of any one or more events of default by the other party shall operate as, or be construed to be, a permanent waiver of any rights or obligations under the Contract, or an express or implied acceptance of any other existing or future default or defaults, whether of a similar or different character.
- 7.18 **Modifications.** The Contract can be modified or amended only in writing signed by both parties. No pre-printed or similar terms on any Contractor invoice, order or other document shall have any force or effect to change the terms, covenants, and conditions of the Contract.
- 7.19 **Interpretation.** The Contract is intended by the parties as a final, complete and exclusive statement of the terms of their agreement. No course of prior dealing between the parties or course of performance or usage of the trade shall be relevant to supplement or explain any term used in the Contract. Although the Contract may have been substantially drafted by one party, it is the intent of the parties that all provisions be construed in a manner to be fair to both parties, reading no provisions more strictly against one party or the other. Whenever a term defined by the Uniform Commercial Code, as enacted by the State of Texas, is used in the Contract, the UCC definition shall control, unless otherwise defined in the Contract.
- 7.20 **Dispute Resolution.**
- 7.20.1 If a dispute arises out of or relates to the Contract, or the breach thereof, the parties agree to negotiate prior to prosecuting a suit for damages. However, this section does not prohibit the filing of a lawsuit to toll the running of a statute of limitations or to seek injunctive relief. Either party may make a written request for a meeting between representatives of each party within fourteen (14) calendar days after receipt of the request or such later period as agreed by the parties. Each party shall include, at a minimum, one (1) senior level individual with decision-making authority regarding the dispute. The purpose of this and any subsequent meeting is to attempt in good faith to negotiate a resolution of the dispute.
- 7.21 **Subcontractors.**
- 7.21.1 Work performed for the Contractor by a Subcontractor shall be pursuant to a written contract between the Contractor and Subcontractor. The terms of the subcontract may not conflict with the terms of the Contract, and shall contain provisions that:
- 7.21.1.1 require that all deliverables to be provided by the Subcontractor be provided in strict accordance with the provisions, specifications and terms of the Contract.
- 7.21.1.2 prohibit the Subcontractor from further subcontracting any portion of the Contract without the prior written consent of the City and the Contractor. The City may require, as a condition to such

further subcontracting, that the Subcontractor post a payment bond in form, substance and amount acceptable to the City;

7.21.1.3 require Subcontractors to submit all invoices and applications for payments, including any claims for additional payments, damages or otherwise, to the Contractor in sufficient time to enable the Contractor to include same with its invoice or application for payment to the City in accordance with the terms of the Contract;

7.21.1.4 require that all Subcontractors obtain and maintain, throughout the term of their contract, insurance in the type and amounts specified for the Contractor, with the City being a named insured as its interest shall appear; and

7.21.1.5 require that the Subcontractor indemnify and hold the City harmless to the same extent as the Contractor is required to indemnify the City.

7.21.2 The Contractor shall be fully responsible to the City for all acts and omissions of the Subcontractors just as the Contractor is responsible for the Contractor's own acts and omissions. Nothing in the Contract shall create for the benefit of any such Subcontractor any contractual relationship between the City and any such Subcontractor, nor shall it create any obligation on the part of the City to pay or to see to the payment of any moneys due any such Subcontractor except as may otherwise be required by law.

7.21.3 The Contractor shall pay each Subcontractor its appropriate share of payments made to the Contractor not later than ten (10) calendar days after receipt of payment from the City.

7.21.4 For the purposes of this Contract, Subcontractors shall not include entities or people performing work under a Cooperative Research and Development Agreement with Contractor, including agreements made pursuant to the Federal Transfer Act.

7.22 **Jurisdiction and Venue.** The Contract is made under and shall be governed by the laws of the State of Texas, including, when applicable, the Uniform Commercial Code as adopted in Texas, V.T.C.A., Bus. & Comm. Code, Chapter 1, excluding any rule or principle that would refer to and apply the substantive law of another state or jurisdiction.

7.23 **Invalidity.** The invalidity, illegality, or unenforceability of any provision of the Contract shall in no way affect the validity or enforceability of any other portion or provision of the Contract. Any void provision shall be deemed severed from the Contract and the balance of the Contract shall be construed and enforced as if the Contract did not contain the particular portion or provision held to be void. The parties further agree to reform the Contract to replace any stricken provision with a valid provision that comes as close as possible to the intent of the stricken provision. The provisions of this section shall not prevent this entire Contract from being void should a provision which is the essence of the Contract be determined to be void.

7.24 **Holidays.** The following holidays are observed by the City:

<u>Holiday</u>	<u>Date Observed</u>
New Year's Day	January 1
Martin Luther King, Jr.'s Birthday	Third Monday in January
President's Day	Third Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4
Labor Day	First Monday in September
Veteran's Day	November 11
Thanksgiving Day	Fourth Thursday in November
Friday after Thanksgiving	Friday after Thanksgiving
Christmas Eve	December 24
Christmas Day	December 25

If a Legal Holiday falls on Saturday, it will be observed on the preceding Friday. If a Legal Holiday falls on Sunday, it will be observed on the following Monday.

- 7.25 **Survivability of Obligations.** All provisions of the Contract that impose continuing obligations on the parties, including but not limited to the warranty, indemnity, and confidentiality obligations of the parties, shall survive the expiration or termination of the Contract.
- 7.26 **Non-Suspension or Debarment Certification.** The City of Austin is prohibited from contracting with or making prime or sub-awards to parties that are suspended or debarred or whose principals are suspended or debarred from Federal, State, or City of Austin Contracts. By accepting a Contract with the City, the Vendor certifies that its firm and its principals are not currently suspended or debarred from doing business with the Federal Government, as indicated by the General Services Administration List of Parties Excluded from Federal Procurement and Non-Procurement Programs, the State of Texas, or the City of Austin.
- 7.27 **Incorporation of Documents.** Section 0100, Standard Purchase Definitions, is hereby incorporated into this Contract by reference, with the same force and effect as if they were incorporated in full text. The full text versions of this Section are available, on the Internet at the following online address:
https://assets.austintexas.gov/purchase/downloads/standard_purchase_definitions.pdf

In witness whereof, the parties have caused duly authorized representatives to execute this Contract on the dates set forth below.

UNIVERSITY OF NORTH TEXAS

Carla McQuire
Printed Name of Authorized Person:

[Signature]
Signature:

Director, Pre-Award + Contracts
Title:

5/1/19
Date:

CITY OF AUSTIN

Sandy Wirtanen
Printed Name of Authorized Person:

[Signature]
Signature:

Procurement Specialist IV
Title:

5/1/19
Date:

List of Exhibits

- | | |
|-----------|---|
| Exhibit A | Proposal and Pricing Agreement - Aquatic Macrophyte Restoration Project |
| Exhibit B | Non-Discrimination Certification, Section 0800 |
| Exhibit C | Non-Suspension or Debarment Certification, Section 0805 |
| Exhibit D | Nonresident Bidder Provisions, Section 0835 |

Exhibit A

Aquatic Macrophyte Restoration Project, City of Austin, Texas

Project proposal
prepared by

Sam Atkinson
University of North Texas, Director of the Institute of Applied Sciences
and
Aaron Schad, Lyndie Dodd, and Gary Owen Dick (Technical Advisors)
USACE Engineer Research and Development Center
Lewisville Aquatic Ecosystem Research Facility

1.0 Objectives

- 1.1 The purpose of this proposal is to continue providing technical assistance in support of a City of Austin program to manage and restore aquatic vegetation in Lake Austin and Lady Bird Lake, Texas. This work is being coordinated with ongoing efforts conducted by the Corps of Engineers' Lewisville Aquatic Ecosystem Research Facility (LAERF) and by University of North Texas researchers.
- 1.2 Objectives of the proposed work are to assist the City of Austin in the following areas:
 - 1.2.1 Continued development of restoration strategies for Lake Austin and Lady Bird Lake;
 - 1.2.2 Project implementation, monitoring, and evaluation of aquatic plant growth; Provide reports and other information on status of plant establishment

2.0 Background

- 2.1 The Lower Colorado River has suffered frequent and heavy disturbances over the last 100 or so years. Notable among these disturbances have been the construction of dams and resultant alterations of water flow and water levels. In addition to impoundment, the riverine ecosystem has been impacted by considerable inputs of nutrients and pollutants. Although an aquatic plant community reportedly developed in Lake Austin following impoundment, aquatic vegetation had apparently declined by the early 1960's, leading to intentional introduction of a non-native species, Eurasian watermilfoil (*Myriophyllum spicatum*), for improvement of waterfowl habitat. Unfortunately, Eurasian watermilfoil was a poor choice to meet the goal of its introduction, and improvements in waterfowl habitat were never realized. Additionally, Eurasian watermilfoil is recognized as a poor habitat basis for centrarchids and other fish species. A second exotic species, Hydrilla (*Hydrilla verticillata*), was first reported in the lake in 1999, which by 2002 had spread to cover over 320 acres (May 2002 survey, Texas Parks and Wildlife Department), greatly limiting water-based recreation, contributing to additional flooding, disrupting water supplies, and interfering with hydropower production. Insufficient amounts of competing native vegetation (and drawdown-managed Eurasian watermilfoil) present in the lake did little to prevent invasion by hydrilla.
- 2.2 The City of Austin, LCRA, and Texas Parks and Wildlife Department (TPWD) reached an agreement to stock grass carp (*Ctenopharyngodon idella*) for hydrilla control in the

lake beginning in 2004. Positive results have been reported to date: Hydrilla coverage was reduced to less than 40 acres by 2006 (TPWD surveys) and remained at low levels through 2009, although a resurgence of Eurasian watermilfoil did occur during that time. Recovery of Hydrilla in 2011 and 2012 has triggered additional grass carp stocking in an effort to reduce its recovery in the lake.

- 2.3 At the same time efforts were initiated to manage hydrilla, the City of Austin contracted with the LAERF to promote establishment of desirable native aquatic vegetation in the lake with the goal of producing a balanced aquatic ecosystem.
- 2.4 Native aquatic plant founder colonies have been installed in Lake Austin to help ensure that native plant propagules will be available for natural spread in the lake once exotic species growth is suppressed. These colonies are well protected from grass carp and/or consist of species less palatable to the fish than Hydrilla, increasing likelihood of spread even while the fish remain in the lake. Because complete elimination of aquatic plants from Lake Austin could seriously affect the centrarchid fishery, efforts to restore native aquatic plants in conjunction with those to reduce exotic species should serve to maintain nursery habitat necessary for a healthy fishery. An additional benefit to establishing native aquatic vegetation is its ability to reduce future hydrilla and Eurasian watermilfoil infestations by occupying niches left open by grass carp feeding and drawdowns.
- 2.5 As part of the vegetation management project, LAERF has also installed native aquatic plant founder colonies in Lady Bird Lake, just downstream from Lake Austin. This lake has historically supported only limited amounts of vegetation, with small patches of Eurasian watermilfoil and a few native species occurring. Although hydrilla has yet to become established in the lake, there is a potential for fragments from Lake Austin to gain a foothold in Lady Bird Lake, leading to problems similar to those occurring in Lake Austin. Founder colonies should ensure development of native plant communities that will not only provide better habitat for fish and other aquatic wildlife, but also help resist invasions by hydrilla and other nuisance species in the lake.
- 2.6 Planting was initiated in 2004, and by the end of 2007, both lakes supported viable native plant founder colonies at ten or more sites (on each lake) that have begun to spread outside protected areas. In 2008, an additional ten founder colony sites were set up on each lake, with each site consisting of eight ring cages in shallow water; deeper plantings were made at appropriate sites to put native plants at depths more likely to be infested with hydrilla (including one site planted in six feet of water in Barton Creek). These new founder colonies have provided the immediate benefit of additional habitat and increased the quantity of propagules produced, shortening the time required for significant spread to other areas.
- 2.7 In 2008 larger-scale protection was added to a number of sites in each lake, permitting additional growth of plants and increasing propagule production in both lakes. This effort continued from 2010 through 2012. Although founder colonies on both lakes were surviving and spreading beyond protective cages, herbivory outside enclosures continued to affect sustained spread and natural development of new colonies. For the most part, herbivory was attributed to non-native swans and basking turtles in Lady Bird Lake and a combination of domestic waterfowl, fish, and turtles on Lake Austin. While plants persisted within the small enclosures, growth outside of cages was intermittent. This new growth was often decimated by herbivores, resulting in a cycle of growth and decline outside of cages. Combined with periodic but significant fluctuations in water levels (e.g., drawdowns in Lake Austin), many plants in the founder colonies were in a constant mode of recovery, not spread, during much of the growing season. Increasing the protected area of existing founder colonies has improved productivity: greater biomass production has increased spread outside of

exclosures and propagule production, bettering the chances of new colony development. Larger colonies also appear to be able to withstand periods of low water. In our initial tests, plants inside the pens had spread well beyond growth documented at sites without pens after only one month. Between 2009 and 2012, we expanded installation of larger exclosures in both lakes and noted improvements in founder colony coverage and spread in both.

- 2.8 We also began addressing deeper water areas in which plants had not yet established. Several tests were conducted during between 2009 and 2012 to develop methods for deeper plantings of wild celery (*Vallisneria americana*). By 2012, we concluded that large containerized plants (14-inch diameter x 4-inch deep) could be placed in cylindrical cages and set on the bottom of either lake to depths up to 6-ft with good establishment at selected test sites.
- 2.9 An initiative in 2008 involved addressing the issue of shoreline erosion on Lake Austin. Existing colonies of the emergent species American bulrush (*Schoenoplectus pungens*) were observed establishing in erosion-prone areas in the lake, and it was proposed that planting well-rooted plants in other eroding areas could speed up the process of natural establishment and protect these fragile shorelines. In September 2008, plantings were made at existing founder colony sites that included eroding sandy banks. Additional tests were conducted in 2009 by incorporating coir logs and plantings for immediate and long-term erosion management. Results of these studies (evaluated most recently in 2012) indicated that coir logs provide short-term substrate protection from wave action, and even trap sediments. At the same time, plants installed in coir logs established more rapidly and fully, and were able to take over coir log erosion control function once coir logs degraded.
- 2.10 An initiative begun in 2011 included LAERF assistance in evaluating the need for management of nuisance riparian species, including giant cane, elephant ear, and other. LAERF provided recommendations to the City for herbicide application of giant cane, and conducted tests to ascertain which herbicide and application technique was suitable for combined elephant ear removal and restoration of native emergent species. This work will continue through the end of 2012.
- 2.11 To address erosional problems in Lake Austin, LAERF assisted in the installation of coir logs along ~2,000' of shoreline and subsequently planted emergent aquatic vegetation behind the logs. This effort was a significant expansion of previous coir log installation efforts and was based on the successes previously observed and documented. Evaluations of vegetation cages in 2013-2015 for Lakes Austin and Lady Bird found that the cages continue to sustain a large variety of desired aquatic plants. In 2015, we installed 9 new, large pens in Lake Austin. The purpose of the work was two-fold. First, we sought to continue expanding the extent of founder colonies in the reservoir. And second, we build the pens side-by-side utilizing two different mesh sizes (2" x 4" and 2" x 2") so we could evaluate herbivore access. The hypothesis being that vegetation contained in the smaller mesh cages will be better protected from small fish and turtles that may consume the vegetation. Persistence and spread of vegetation within the cages will continue to be monitored over a year period and findings will inform future cage building material choices in the reservoirs.
- 2.12 With the findings of our side-by-side experiment, we have expanded the number and size of the vegetation cages in Lake Austin from 2016-2018. We expanded the footprint of the nine large pens previously installed and have installed new pens at additional sites along public shorelines. By expanding the footprint around existing pens, we have enabled the established vegetation to colonize new areas. By expanding into new areas, we are providing more shoreline protection and the extent of viable founder colonies to spread into the reservoir. It is estimated that during this

time period, over 10,000sq ft of vegetation has been re-established in Lake Austin. Additional emergent vegetation, primarily water willow, has been installed at sites along Lake Austin outside of vegetation pens due to its natural resistance to herbivory and because it provides desired water quality and biological benefits. In addition, a new ~1000sq ft pen was installed in Lady Bird Lake; on a newly formed island at the mouth of Shoal Creek, nearly two dozen cypress trees were planted to protect the feature from future erosion and to provide wildlife habitat.

3.0 SCOPE OF WORK, 2019 through 2021 Work

- 3.1 Native aquatic plant establishment and protection: Monitoring and maintenance are required for long-term establishment of founder colonies and is being continued past the installation/expansion phases. Because of the success provided by larger pens, it is proposed that in addition to monitoring and replanting in existing sites, additional pens should be constructed at remaining appropriate sites in each reservoir. These pens will serve to increase founder colony area coverage and propagule (seeds, fragments, etc.) production. Founder colony productivity should increase to levels needed to overcome natural establishment limitations in both lakes. In turn, this would hasten spread to unprotected areas in both reservoirs.
 - 3.1.1 Plantings of emergent species (primarily water willow) outside of vegetation pens for shoreline protection at the founder colony sites will be expanded to all appropriate sites (typically sandy banks) as a mechanism for minimizing shoreline erosion on Lake Austin.
- 3.2 Riparian plantings: The City has requested assistance with additional plantings of riparian areas in Lady Bird Lake. Establishing desirable native plants in areas in which other activities have reduced or prevented plant community development. LAERF will plant these areas with desired native shrubs and herbaceous species to protect against erosion problems. Riparian plantings will also be included under this proposal: LAERF will provide specific plans for each area to the City for approval before implementing each planting.
- 3.3 Macroinvertebrate study: With the persistence of aquatic vegetation in large pens over the past 2-4 years, the City has requested a study of benefits provided by the presence of vegetation relative to areas without. Specifically, an important ecosystem component, benthic invertebrates, will be sampled, identified, quantified, and compared between vegetated sites and nearby un-vegetated areas. Aquatic vegetation has been shown to support greater invertebrate biomass relative to un-vegetated areas in other aquatic systems. The City would like to confirm that our vegetation pens are providing similar ecosystem benefits. By comparing pens that have been vegetated for different periods of time (1-4 years continuously) and relative to areas with no plants, we can describe invertebrate community dynamics (e.g., diversity, density, succession).

4.0 Tasks

Tasks 1 through 11 have been completed. Task 12 is a new task.

Task 1. Test plantings (2004)

Objective: Evaluation of native plant species suitability and need for protection in both lakes; install a minimum of ten founder colonies in each lake. Work completed.

Task 2. Founder colony development (2005-2006)

Objective: Expansion of founder colonies using results obtained during Task 1 with focus on successful native plant species, protective devices, and planting techniques. Work completed.

Task 3. Barton Springs Pool restoration—add-on task (2008)

Objective: Establish native aquatic vegetation in Barton Springs Pool for improvement of endangered salamander habitat. Work completed.

Task 4. Monitoring founder colonies (2007)

Objective: Monitor and evaluate founder colony sites. Work completed.

Task 5. Founder colony improvement (2008)

Objectives: Add new founder colonies (minimum 10 per lake) and expand existing founder colonies in both lakes. Work completed.

Task 6. Founder colony improvement and shoreline erosion control (2009)

Objectives: Build on success of efforts in 2008 and 2009 by extending use of larger herbivore exclusion structures (pens) as appropriate. Continue monitoring and planting (as needed) of all existing sites (20 per lake). Continue planting of three-square bulrush as shoreline erosion control as appropriate. Quarterly reports on the progress of the project will be provided during this period. Work completed.

Task 7. Founder colony improvements (2009)

Objectives: Conduct tests incorporating aquatic plants and coir logs to manage shoreline erosion issues occurring in Lake Austin. Work completed.

Task 8. Founder colony maintenance and improvements (2010-2012)

Objectives: Continue maintaining aquatic plant founder colonies, including installation of additional larger herbivore enclosures where appropriate. Work completed.

Task 9. Managing nuisance riparian species in Lady Bird Lake (2011)

Objectives: Provide invasive riparian species management plan and conduct field demonstrations of combined elephant ear control and native species restoration. Work completed.

Task 10. Founder colony maintenance and improvements; riparian plantings (2013-2015)

Objectives: Continue maintaining aquatic plant founder colonies, including installation of additional larger herbivore enclosures where appropriate. Additionally, selected areas will be planted with riparian species at the discretion of the City of Austin and UNT. *Total Funding for Task 10 is not to exceed \$120,000 over the three year funded period.* Work completed.

Funding: FY 2013 (1 Jan 2013 – 31 December 2013) — \$40,000
FY 2014 (1 Jan 2014 – 31 December 2014) — \$40,000
FY 2015 (1 Jan 2015 – 31 December 2015) — \$40,000

Task 11. Founder colony maintenance and improvements; riparian plantings (2016-2018)

Objectives: Continue monitoring aquatic plant founder colonies. Install additional pens where appropriate. Expand revegetation efforts where non-native species are removed and along erosional shorelines. Work completed.

Funding: FY 2016 (1 Jan 2016 – 31 December 2016) — \$50,000
FY 2017 (1 Jan 2017 – 31 December 2017) — \$50,000
FY 2018 (1 Jan 2018 – 31 December 2018) — \$50,000

Task 12. Founder colony maintenance and improvements: macroinvertebrate study (2019-2021)

Objectives: Continue monitoring aquatic plant founder colonies. Install additional pens where appropriate. Expand revegetation efforts where non-native species are removed and along erosional shorelines. Survey benthic macroinvertebrates and draft report of the findings. New Task.

Funding: FY 2019 - 2020 (1 Jan 2019 - 31 December 2019) --- \$50,000
FY 2020 - 2021 (1 Jan 2020 - 31 December 2020) --- \$50,000
FY 2021 - 2022 (1 Jan 2021 - 31 December 2021) --- \$50,000

5.0 COST SECTION

Indirect Cost Rates:

Because some funding for this project is coming from another state Agency, the Predetermined Indirect Cost Rate for this contract shall be 10.0% of total direct costs for the grant period of 1 January 2019 - 31 December 2021. Budgets for additional tasks will be provided when funding is provided by the City of Austin.

6.0 Term of AMENDMENT

This contract is to begin on 1 January 2019 and shall terminate on 31 December 2021.

THE UNDERSIGNED CONTRACTING PARTIES do hereby certify that: (1) the services specified above are necessary and essential for activities that are properly within the statutory functions and programs of the affected agencies of State Government; (2) the proposed arrangements serve the interest of efficient and economical administration of the State Government, and (3) the services, supplies or materials contracted for are not required by Section 21 of Article 16 of the Constitution of Texas to be supplied under contract given to the lowest responsible bidder.

PERFORMING AGENCY further certifies that it has the authority to contract for the above services by authority granted in Article 4413 (32e) V.C.S. and Chapter 105 of the Texas Education Code.

RECEIVING AGENCY further certifies that it has the authority to perform the services contracted for by authority granted in Article 4413 (32e) V.C.S.

7.0 Points of Contact

Sam Atkinson
University of North Texas
1155 Union Cir
Denton, TX 76203
940-585-2694
Sam.Atkinson@UNT.edu

Aaron Schad
Lewisville Aquatic Ecosystem Research Facility
201 E. Jones Street
Lewisville, TX 76057
210-379-2936
Aaron.n.schad@usace.army.mil

Exhibit B

City of Austin, Texas NON-DISCRIMINATION AND NON-RETALIATION CERTIFICATION

City of Austin, Texas

Equal Employment/Fair Housing Office

To: City of Austin, Texas,

I hereby certify that our firm complies with the Code of the City of Austin, Section 5-4-2 as reiterated below, and agrees:

- (1) Not to engage in any discriminatory employment practice defined in this chapter.
- (2) To take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without discrimination being practiced against them as defined in this chapter, including affirmative action relative to employment, promotion, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation, and selection for training or any other terms, conditions or privileges of employment.
- (3) To post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Equal Employment/Fair Housing Office setting forth the provisions of this chapter.
- (4) To state in all solicitations or advertisements for employees placed by or on behalf of the Contractor, that all qualified applicants will receive consideration for employment without regard to race, creed, color, religion, national origin, sexual orientation, gender identity, disability, sex or age.
- (5) To obtain a written statement from any labor union or labor organization furnishing labor or service to Contractors in which said union or organization has agreed not to engage in any discriminatory employment practices as defined in this chapter and to take affirmative action to implement policies and provisions of this chapter.
- (6) To cooperate fully with City and the Equal Employment/Fair Housing Office in connection with any investigation or conciliation effort of the Equal Employment/Fair Housing Office to ensure that the purpose of the provisions against discriminatory employment practices are being carried out.
- (7) To require of all subcontractors having 15 or more employees who hold any subcontract providing for the expenditure of \$2,000 or more in connection with any contract with the City subject to the terms of this chapter that they do not engage in any discriminatory employment practice as defined in this chapter

For the purposes of this Offer and any resulting Contract, Contractor adopts the provisions of the City's Minimum Standard Non-Discrimination and Non-Retaliation Policy set forth below.

City of Austin Minimum Standard Non-Discrimination and Non-Retaliation in Employment Policy

As an Equal Employment Opportunity (EEO) employer, the Contractor will conduct its personnel activities in accordance with established federal, state and local EEO laws and regulations.

The Contractor will not discriminate against any applicant or employee based on race, creed, color, national origin, sex, age, religion, veteran status, gender identity, disability, or sexual orientation. This policy covers all aspects of employment, including hiring, placement, upgrading, transfer, demotion, recruitment, recruitment advertising, selection for training and apprenticeship, rates of pay or other forms of compensation, and layoff or termination.

The Contractor agrees to prohibit retaliation, discharge or otherwise discrimination against any employee or applicant for employment who has inquired about, discussed or disclosed their compensation.

Further, employees who experience discrimination, sexual harassment, or another form of harassment should immediately report it to their supervisor. If this is not a suitable avenue for addressing their complaint, employees are advised to contact another member of management or their human resources representative. No employee shall be discriminated against, harassed, intimidated, nor suffer any reprisal as a result of reporting a violation of this policy. Furthermore, any employee, supervisor, or manager who becomes aware of any such discrimination or harassment should immediately report it to executive management or the human resources office to ensure that such conduct does not continue.

Contractor agrees that to the extent of any inconsistency, omission, or conflict with its current non-discrimination and non-retaliation employment policy, the Contractor has expressly adopted the provisions of the City's Minimum Non-Discrimination Policy contained in Section 5-4-2 of the City Code and set forth above, as the Contractor's Non-Discrimination Policy or as an amendment to such Policy and such provisions are intended to not only supplement the Contractor's policy, but will also supersede the Contractor's policy to the extent of any conflict.

UPON CONTRACT AWARD, THE CONTRACTOR SHALL PROVIDE THE CITY A COPY OF THE CONTRACTOR'S NON-DISCRIMINATION AND NON-RETALIATION POLICIES ON COMPANY LETTERHEAD, WHICH CONFORMS IN FORM, SCOPE, AND CONTENT TO THE CITY'S MINIMUM NON-DISCRIMINATION AND NON-RETALIATION POLICIES, AS SET FORTH HEREIN, OR THIS NON-DISCRIMINATION AND NON-RETALIATION POLICY, WHICH HAS BEEN ADOPTED BY THE CONTRACTOR FOR ALL PURPOSES WILL BE CONSIDERED THE CONTRACTOR'S NON-DISCRIMINATION AND NON-RETALIATION POLICY WITHOUT THE REQUIREMENT OF A SEPARATE SUBMITTAL.

Sanctions:

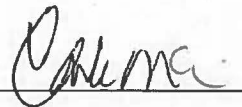
Our firm understands that non-compliance with Chapter 5-4 and the City's Non-Retaliation Policy may result in sanctions, including termination of the contract and suspension or debarment from participation in future City contracts until deemed compliant with the requirements of Chapter 5-4 and the Non-Retaliation Policy.

Term:

The Contractor agrees that this Section 0800 Non-Discrimination and Non-Retaliation Certificate of the Contractor's separate conforming policy, which the Contractor has executed and filed with the City, will remain in force and effect for one year from the date of filing. The Contractor further agrees that, in consideration of the receipt of continued Contract payment, the Contractor's Non-Discrimination and Non-Retaliation Policy will automatically renew from year-to-year for the term of the underlying Contract.

Dated this 1st day of May, 2019

CONTRACTOR
Authorized
Signature


Carla McGuire

Title

Director, Pre-Award + Contracts

Exhibit C

City of Austin, Texas Section 0805

NON-SUSPENSION OR DEBARMENT CERTIFICATION

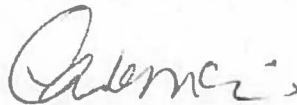
The City of Austin is prohibited from contracting with or making prime or sub-awards to parties that are suspended or debarred or whose principals are suspended or debarred from Federal, State, or City of Austin Contracts. Covered transactions include procurement contracts for goods or services equal to or in excess of \$25,000.00 and all non-procurement transactions. This certification is required for all Vendors on all City of Austin Contracts to be awarded and all contract extensions with values equal to or in excess of \$25,000.00 or more and all non-procurement transactions.

The Offeror hereby certifies that its firm and its principals are not currently suspended or debarred from bidding on any Federal, State, or City of Austin Contracts.

Contractor's Name:

University of North Texas

Signature of Officer or
Authorized
Representative:



Date:

5/1/19

Printed Name:

Carla McGuire

Title

Director, Pre-Award + Contracts

Exhibit D

City of Austin, Texas
NONRESIDENT BIDDER PROVISIONS
MA 6300 NA190000095

- A. Bidder must answer the following questions in accordance with Vernon's Texas Statutes and Codes Annotated Government Code 2252.002, as amended:

Is the Bidder that is making and submitting this Bid a "Resident Bidder" or a "Non-resident Bidder"?

Answer: Texas Resident Bidder

- (1) Texas Resident Bidder – A Bidder whose principal place of business is in Texas and includes a Contractor whose ultimate parent company or majority owner has its principal place of business in Texas.
- (2) Nonresident Bidder – A Bidder who is not a Texas Resident Bidder.
- B. If the Bidder is a "Nonresident Bidder" does the state, in which the Nonresident Bidder's principal place of business is located, have a law requiring a Nonresident Bidder of that state to bid a certain amount or percentage under the Bid of a Resident Bidder of that state in order for the nonresident Bidder of that state to be awarded a Contract on such bid in said state.

Answer: _____ Which State: _____

- C. If the answer to Question B is "yes", then what amount or percentage must a Texas Resident Bidder bid under the bid price of a Resident Bidder of that state in order to be awarded a Contract on such bid in said state?

Answer: _____

Bidder's Name: University of North Texas

Signature of Officer or
Authorized
Representative:

Charmaine

Date: 5/1/19

Printed Name:

Charla McGuire

Title

Director, Pre-Award + Contracts

Aquatic Macrophyte Restoration Project, City of Austin, Texas

Project proposal
prepared by

Sam Atkinson
University of North Texas, Director of the Institute of Applied Sciences
and
Aaron Schad, Lynde Dodd, and Gary Owen Dick (Technical Advisors)
USACE Engineer Research and Development Center
Lewisville Aquatic Ecosystem Research Facility

1.0 Objectives

- 1.1 The purpose of this proposal is to continue providing technical assistance in support of a City of Austin program to manage and restore aquatic vegetation in Lake Austin and Lady Bird Lake, Texas. This work is being coordinated with ongoing efforts conducted by the Corps of Engineers' Lewisville Aquatic Ecosystem Research Facility (LAERF) and by University of North Texas researchers.
- 1.2 Objectives of the proposed work are to assist the City of Austin in the following areas:
 - 1.2.1 Continued development of restoration strategies for Lake Austin and Lady Bird Lake;
 - 1.2.2 Project implementation, monitoring, and evaluation of aquatic plant growth; Provide reports and other information on status of plant establishment

2.0 Background

- 2.1 The Lower Colorado River has suffered frequent and heavy disturbances over the last 100 or so years. Notable among these disturbances have been the construction of dams and resultant alterations of water flow and water levels. In addition to impoundment, the riverine ecosystem has been impacted by considerable inputs of nutrients and pollutants. Although an aquatic plant community reportedly developed in Lake Austin following impoundment, aquatic vegetation had apparently declined by the early 1960's, leading to intentional introduction of a non-native species, Eurasian watermilfoil (*Myriophyllum spicatum*), for improvement of waterfowl habitat. Unfortunately, Eurasian watermilfoil was a poor choice to meet the goal of its introduction, and improvements in waterfowl habitat were never realized. Additionally, Eurasian watermilfoil is recognized as a poor habitat basis for centrarchids and other fish species. A second exotic species, Hydrilla (*Hydrilla verticillata*), was first reported in the lake in 1999, which by 2002 had spread to cover over 320 acres (May 2002 survey, Texas Parks and Wildlife Department), greatly limiting water-based recreation, contributing to additional flooding, disrupting water supplies, and interfering with hydropower production. Insufficient amounts of competing native vegetation (and drawdown-managed Eurasian watermilfoil) present in the lake did little to prevent invasion by hydrilla.
- 2.2 The City of Austin, LCRA, and Texas Parks and Wildlife Department (TPWD) reached an agreement to stock grass carp (*Ctenopharyngodon idella*) for hydrilla control in the

lake beginning in 2004. Positive results have been reported to date: Hydrilla coverage was reduced to less than 40 acres by 2006 (TPWD surveys) and remained at low levels through 2009, although a resurgence of Eurasian watermilfoil did occur during that time. Recovery of Hydrilla in 2011 and 2012 has triggered additional grass carp stocking in an effort to reduce its recovery in the lake.

- 2.3 At the same time efforts were initiated to manage hydrilla, the City of Austin contracted with the LAERF to promote establishment of desirable native aquatic vegetation in the lake with the goal of producing a balanced aquatic ecosystem.
- 2.4 Native aquatic plant founder colonies have been installed in Lake Austin to help ensure that native plant propagules will be available for natural spread in the lake once exotic species growth is suppressed. These colonies are well protected from grass carp and/or consist of species less palatable to the fish than Hydrilla, increasing likelihood of spread even while the fish remain in the lake. Because complete elimination of aquatic plants from Lake Austin could seriously affect the centrarchid fishery, efforts to restore native aquatic plants in conjunction with those to reduce exotic species should serve to maintain nursery habitat necessary for a healthy fishery. An additional benefit to establishing native aquatic vegetation is its ability to reduce future hydrilla and Eurasian watermilfoil infestations by occupying niches left open by grass carp feeding and drawdowns.
- 2.5 As part of the vegetation management project, LAERF has also installed native aquatic plant founder colonies in Lady Bird Lake, just downstream from Lake Austin. This lake has historically supported only limited amounts of vegetation, with small patches of Eurasian watermilfoil and a few native species occurring. Although hydrilla has yet to become established in the lake, there is a potential for fragments from Lake Austin to gain a foothold in Lady Bird Lake, leading to problems similar to those occurring in Lake Austin. Founder colonies should ensure development of native plant communities that will not only provide better habitat for fish and other aquatic wildlife, but also help resist invasions by hydrilla and other nuisance species in the lake.
- 2.6 Planting was initiated in 2004, and by the end of 2007, both lakes supported viable native plant founder colonies at ten or more sites (on each lake) that have begun to spread outside protected areas. In 2008, an additional ten founder colony sites were set up on each lake, with each site consisting of eight ring cages in shallow water; deeper plantings were made at appropriate sites to put native plants at depths more likely to be infested with hydrilla (including one site planted in six feet of water in Barton Creek). These new founder colonies have provided the immediate benefit of additional habitat and increased the quantity of propagules produced, shortening the time required for significant spread to other areas.
- 2.7 In 2008 larger-scale protection was added to a number of sites in each lake, permitting additional growth of plants and increasing propagule production in both lakes. This effort continued from 2010 through 2012. Although founder colonies on both lakes were surviving and spreading beyond protective cages, herbivory outside exclosures continued to affect sustained spread and natural development of new colonies. For the most part, herbivory was attributed to non-native swans and basking turtles in Lady Bird Lake and a combination of domestic waterfowl, fish, and turtles on Lake Austin. While plants persisted within the small exclosures, growth outside of cages was intermittent. This new growth was often decimated by herbivores, resulting in a cycle of growth and decline outside of cages. Combined with periodic but significant fluctuations in water levels (e.g., drawdowns in Lake Austin), many plants in the founder colonies were in a constant mode of recovery, not spread, during much of the growing season. Increasing the protected area of existing founder colonies has improved productivity: greater biomass production has increased spread outside of

exclosures and propagule production, bettering the chances of new colony development. Larger colonies also appear to be able to withstand periods of low water. In our initial tests, plants inside the pens had spread well beyond growth documented at sites without pens after only one month. Between 2009 and 2012, we expanded installation of larger exclosures in both lakes and noted improvements in founder colony coverage and spread in both.

- 2.8 We also began addressing deeper water areas in which plants had not yet established. Several tests were conducted during between 2009 and 2012 to develop methods for deeper plantings of wild celery (*Vallisneria americana*). By 2012, we concluded that large containerized plants (14-inch diameter x 4-inch deep) could be placed in cylindrical cages and set on the bottom of either lake to depths up to 6-ft with good establishment at selected test sites.
- 2.9 An initiative in 2008 involved addressing the issue of shoreline erosion on Lake Austin. Existing colonies of the emergent species American bulrush (*Schoenoplectus pungens*) were observed establishing in erosion-prone areas in the lake, and it was proposed that planting well-rooted plants in other eroding areas could speed up the process of natural establishment and protect these fragile shorelines. In September 2008, plantings were made at existing founder colony sites that included eroding sandy banks. Additional tests were conducted in 2009 by incorporating coir logs and plantings for immediate and long-term erosion management. Results of these studies (evaluated most recently in 2012) indicated that coir logs provide short-term substrate protection from wave action, and even trap sediments. At the same time, plants installed in coir logs established more rapidly and fully, and were able to take over coir log erosion control function once coir logs degraded.
- 2.10 An initiative begun in 2011 included LAERF assistance in evaluating the need for management of nuisance riparian species, including giant cane, elephant ear, and other. LAERF provided recommendations to the City for herbicide application of giant cane, and conducted tests to ascertain which herbicide and application technique was suitable for combined elephant ear removal and restoration of native emergent species. This work will continue through the end of 2012.
- 2.11 To address erosional problems in Lake Austin, LAERF assisted in the installation of coir logs along ~2,000' of shoreline and subsequently planted emergent aquatic vegetation behind the logs. This effort was a significant expansion of previous coir log installation efforts and was based on the successes previously observed and documented. Evaluations of vegetation cages in 2013-2015 for Lakes Austin and Lady Bird found that the cages continue to sustain a large variety of desired aquatic plants. In 2015, we installed 9 new, large pens in Lake Austin. The purpose of the work was two-fold. First, we sought to continue expanding the extent of founder colonies in the reservoir. And second, we build the pens side-by-side utilizing two different mesh sizes (2" x 4" and 2" x 2") so we could evaluate herbivore access. The hypothesis being that vegetation contained in the smaller mesh cages will be better protected from small fish and turtles that may consume the vegetation. Persistence and spread of vegetation within the cages will continue to be monitored over a year period and findings will inform future cage building material choices in the reservoirs.
- 2.12 With the findings of our side-by-side experiment, we have expanded the number and size of the vegetation cages in Lake Austin from 2016–2018. We expanded the footprint of the nine large pens previously installed and have installed new pens at additional sites along public shorelines. By expanding the footprint around existing pens, we have enabled the established vegetation to colonize new areas. By expanding into new areas, we are providing more shoreline protection and the extent of viable founder colonies to spread into the reservoir. It is estimated that during this

time period, over 10,000sq ft of vegetation has been re-established in Lake Austin. Additional emergent vegetation, primarily water willow, has been installed at sites along Lake Austin outside of vegetation pens due to its natural resistance to herbivory and because it provides desired water quality and biological benefits. In addition, a new ~1000sq ft pen was installed in Lady Bird Lake; on a newly formed island at the mouth of Shoal Creek, nearly two dozen cypress trees were planted to protect the feature from future erosion and to provide wildlife habitat.

3.0 SCOPE OF WORK, 2019 through 2021 Work

- 3.1 Native aquatic plant establishment and protection: Monitoring and maintenance are required for long-term establishment of founder colonies and is being continued past the installation/expansion phases. Because of the success provided by larger pens, it is proposed that in addition to monitoring and replanting in existing sites, additional pens should be constructed at remaining appropriate sites in each reservoir. These pens will serve to increase founder colony area coverage and propagule (seeds, fragments, etc.) production. Founder colony productivity should increase to levels needed to overcome natural establishment limitations in both lakes. In turn, this would hasten spread to unprotected areas in both reservoirs.
 - 3.1.1 Plantings of emergent species (primarily water willow) outside of vegetation pens for shoreline protection at the founder colony sites will be expanded to all appropriate sites (typically sandy banks) as a mechanism for minimizing shoreline erosion on Lake Austin.
- 3.2 Riparian plantings: The City has requested assistance with additional plantings of riparian areas in Lady Bird Lake. Establishing desirable native plants in areas in which other activities have reduced or prevented plant community development. LAERF will plant these areas with desired native shrubs and herbaceous species to protect against erosion problems. Riparian plantings will also be included under this proposal: LAERF will provide specific plans for each area to the City for approval before implementing each planting.
- 3.3 Macroinvertebrate study: With the persistence of aquatic vegetation in large pens over the past 2-4 years, the City has requested a study of benefits provided by the presence of vegetation relative to areas without. Specifically, an important ecosystem component, benthic invertebrates, will be sampled, identified, quantified, and compared between vegetated sites and nearby un-vegetated areas. Aquatic vegetation has been shown to support greater invertebrate biomass relative to un-vegetated areas in other aquatic systems. The City would like to confirm that our vegetation pens are providing similar ecosystem benefits. By comparing pens that have been vegetated for different periods of time (1-4 years continuously) and relative to areas with no plants, we can describe invertebrate community dynamics (e.g., diversity, density, succession).

4.0 Tasks

Tasks 1 through 11 have been completed. Task 12 is a new task.

Task 1. Test plantings (2004)

Objective: Evaluation of native plant species suitability and need for protection in both lakes; install a minimum of ten founder colonies in each lake. Work completed.

Task 2. Founder colony development (2005-2006)

Objective: Expansion of founder colonies using results obtained during Task 1 with focus on successful native plant species, protective devices, and planting techniques. Work completed.

Task 3. Barton Springs Pool restoration—add-on task (2006)

Objective: Establish native aquatic vegetation in Barton Springs Pool for improvement of endangered salamander habitat. Work completed.

Task 4. Monitoring founder colonies (2007)

Objective: Monitor and evaluate founder colony sites. Work completed.

Task 5. Founder colony improvement (2008)

Objectives: Add new founder colonies (minimum 10 per lake) and expand existing founder colonies in both lakes. Work completed.

Task 6. Founder colony improvement and shoreline erosion control (2009)

Objectives: Build on success of efforts in 2008 and 2009 by extending use of larger herbivore exclusion structures (pens) as appropriate. Continue monitoring and planting (as needed) of all existing sites (20 per lake). Continue planting of three-square bulrush as shoreline erosion control as appropriate. Quarterly reports on the progress of the project will be provided during this period. Work completed.

Task 7. Founder colony improvements (2009)

Objectives: Conduct tests incorporating aquatic plants and coir logs to manage shoreline erosion issues occurring in Lake Austin. Work completed.

Task 8. Founder colony maintenance and improvements (2010-2012)

Objectives: Continue maintaining aquatic plant founder colonies, including installation of additional larger herbivore exclosures where appropriate. Work completed.

Task 9. Managing nuisance riparian species in Lady Bird Lake (2011)

Objectives: Provide invasive riparian species management plan and conduct field demonstrations of combined elephant ear control and native species restoration. Work completed.

Task 10. Founder colony maintenance and improvements; riparian plantings (2013-2015)

Objectives: Continue maintaining aquatic plant founder colonies, including installation of additional larger herbivore exclosures where appropriate. Additionally, selected areas will be planted with riparian species at the discretion of the City of Austin and UNT. *Total Funding for Task 10 is not to exceed \$120,000 over the three year funded period.* Work completed.

Funding: FY 2013 (1 Jan 2013 – 31 December 2013) — \$40,000
FY 2014 (1 Jan 2014 – 31 December 2014) — \$40,000
FY 2015 (1 Jan 2015 – 31 December 2015) — \$40,000

Task 11. Founder colony maintenance and improvements; riparian plantings (2016-2018)

Objectives: Continue monitoring aquatic plant founder colonies. Install additional pens where appropriate. Expand revegetation efforts where non-native species are removed and along erosional shorelines. Work completed.

Funding: FY 2016 (1 Jan 2016 – 31 December 2016) — \$50,000
FY 2017 (1 Jan 2017 – 31 December 2017) — \$50,000
FY 2018 (1 Jan 2018 – 31 December 2018) — \$50,000

Task 12. Founder colony maintenance and improvements; macroinvertebrate study (2019-2021)

Objectives: Continue monitoring aquatic plant founder colonies. Install additional pens where appropriate. Expand revegetation efforts where non-native species are removed and along erosional shorelines. Survey benthic macroinvertebrates and draft report of the findings. New Task.

Funding: FY 2019 - 2020 (1 Jan 2019 – 31 December 2019) --- \$50,000
FY 2020 - 2021 (1 Jan 2020 – 31 December 2020) --- \$50,000
FY 2021 - 2022 (1 Jan 2021 – 31 December 2021) --- \$50,000

5.0 COST SECTION

Indirect Cost Rates:

Because some funding for this project is coming from another state Agency, the Predetermined Indirect Cost Rate for this contract shall be 10.0% of total direct costs for the grant period of 1 January 2019 – 31 December 2021. Budgets for additional tasks will be provided when funding is provided by the City of Austin.

6.0 Term of AMENDMENT

This contract is to begin on 1 January 2019 and shall terminate on 31 December 2021.

THE UNDERSIGNED CONTRACTING PARTIES do hereby certify that: (1) the services specified above are necessary and essential for activities that are properly within the statutory functions and programs of the affected agencies of State Government; (2) the proposed arrangements serve the interest of efficient and economical administration of the State Government, and (3) the services, supplies or materials contracted for are not required by Section 21 of Article 16 of the Constitution of Texas to be supplied under contract given to the lowest responsible bidder.

PERFORMING AGENCY further certifies that it has the authority to contract for the above services by authority granted in Article 4413 (32e) V.C.S. and Chapter 105 of the Texas Education Code.

RECEIVING AGENCY further certifies that it has the authority to perform the services contracted for by authority granted in Article 4413 (32e) V.C.S.

7.0 Points of Contact

Sam Atkinson
University of North Texas
1155 Union Cir
Denton, TX 76203
940-565-2694
Sam.Atkinson@UNT.edu

Aaron Schad
Lewisville Aquatic Ecosystem Research Facility
201 E. Jones Street
Lewisville, TX 75057
210-379-2936
Aaron.n.schad@usace.army.mil

**COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT
BETWEEN
UNITED STATES ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER
ENVIRONMENTAL LABORATORY
AND
UNIVERSITY OF NORTH TEXAS
FOR
TECHNIQUES AND METHODS FOR CONTROLLING AQUATIC PEST SPECIES IN
PUBLIC WATERS**

This Cooperative Research and Development Agreement (CRADA) is entered into by and between the United States Army Engineer Research and Development Center, Environmental Laboratory, located at 3909 Halls Ferry Road, Vicksburg, MS 39180, hereinafter referred to as ERDC-EL, and the University of North Texas, Office of Research Services, 1501 Chestnut Street, Denton, TX 76203, hereinafter referred to as UNT, pursuant to the authority contained in the Federal Technology Transfer Act of 1986 (15 U.S.C. § 3710a), as amended, and Army Regulation 70-57.

The Act provides that Federal Laboratories' developments should be made accessible to private industry and state and local Governments for the purpose of improving the economic, environmental and social well-being of the United States by stimulating the use of federally funded technology developments or capabilities. The Director of a Government-operated Federal Laboratory may enter into CRADAs with non-Federal entities to conduct collaborative research and development that may include the disposition of patent rights in the inventions that result from collaborating personnel, services, property, facilities, or equipment; and,

WHEREAS the United States Congress has declared that one of the purposes of such legislation is to improve the economic, environmental, and social well-being of the United States by stimulating the utilization of federally funded technology developments by such PARTIES; and,

WHEREAS, the Federal Technology Transfer Act of 1986, among other technology transfer improvements, has provided each Federal agency with the authority to permit the Director of Government-operated Federal Laboratories to enter into Cooperative Research and Development Agreements (CRADAs) with Federal or non-Federal entities, including private firms and organizations, for the purposes of providing to, or obtaining from, collaborating PARTIES, personnel, services, property, facilities, or equipment toward the conduct of specified

research and development efforts which may include the disposition of patent rights in the inventions which may result from such collaborations; and

WHEREAS, ERDC-EL mission includes research and development with respect to the techniques and methods for controlling aquatic pest species in public waters related to increasing aquatic wildlife habitat hereinafter referred to as "the Technology"; and

WHEREAS, ERDC-EL possesses certain advanced scientific skills, facilities, special equipment, information, computer software, and know-how pertaining to the Technology and is interested in the use of the Technology in the private and public sectors; and

WHEREAS, UNT is a PUBLIC UNIVERSITY in the United States having expertise in the Technology; and,

WHEREAS, UNT and ERDC-EL desire to collaborate on projects of mutual interest and access certain specific engineering capabilities uniquely available that each possesses; and

WHEREAS, it is the intention of the PARTIES hereto that research and development activities conducted under this CRADA should be to their mutual benefit and the benefit of the people of the United States; and,

WHEREAS, the cooperative research to be conducted under this CRADA will be cooperatively planned and conducted;

NOW, THEREFORE, the PARTIES hereby agree as follows:

Article 1. Definitions. As used in this CRADA, the following terms shall have the following meanings and such meanings should be equally applicable to both the singular and plural forms of the terms defined:

1.1. "CLASSIFIED" means all information and/or data classified in accordance with the national security laws of the United States.

1.2. "BUSINESS CONFIDENTIAL" as used in this CRADA refers to PROPRIETARY INFORMATION and/or data given or imparted in confidence by either PARTY.

1.3. "CONTROLLED UNCLASSIFIED" means unclassified information as defined in AR 380-10 to which access or distribution limitations have been applied according to national laws, policies, and regulations of the United States Government. It includes United States information that is determined to be exempt from public disclosure according to DOD Directive 5230.25 and DODD 5400.7 or that is subject to export controls according to Title 22, CFR, parts 120-130, International Traffic in Arms Regulations (ITAR) and 15 CFR 730 et seq., Export Administration Regulations (EAR).

1.4. "CRADA" means this cooperative research and development agreement, including any appendices.

1.5. "FOREIGN NATIONAL" means a person who is not a citizen or national of the United States or its territories. This definition does not include permanent residents (formerly immigrant aliens, resident aliens, or intending United States citizens). For the purposes of this CRADA, this is a private non-U.S. citizen or national having no official affiliation with his or her government of origin. (Source: Glossary, Section II, Terms, of AR 380-10, "Foreign Disclosure and Contacts with Foreign Representatives", dated 22 June 2005).

1.6. "GOVERNMENT PURPOSE" means any activity in which the Government is a party, including cooperative agreements with international or multinational defense organizations or sales or transfers by the Government to foreign governments or international organizations, and competitive procurements. Government purpose does not include for commercial purposes.

1.7. "INTELLECTUAL PROPERTY" means patents, copyrights, trade secrets, and trademarks protected by Federal Law and foreign counterparts.

1.8. "INVENTION" means and is limited to any INVENTION or discovery that is or may be patentable under Title 35 of the United States Code (U.S.C.) or the patent laws of any foreign country or any novel variety of plant that is or may be protected under the Plant Variety Protection Act (7 U.S.C. § 2321 et seq.).

1.9. "MADE," with respect to inventions that are patentable, means conception or first actual reduction to practice during the performance of a work statement (Appendix B) under this CRADA by one of the PARTIES to the CRADA (35 U.S.C. § 201(g)).

1.10. "PARTY" means any signatory to this CRADA.

1.11. "PROPRIETARY INFORMATION" means information that embodies trade secrets developed at private expense or that is business or financial information which is privileged or BUSINESS CONFIDENTIAL under the Freedom of Information Act (5 U.S.C. § 552 (b) (4)), provided that such information:

- (a). Is not generally known or available from other sources without obligations concerning their confidentiality;
- (b). Has not been made available by the owners to others without obligation concerning its confidentiality; and

(c). Is not already available to the Government without obligation concerning its confidentiality.

1.12. "PROTECTED CRADA INFORMATION" means SUBJECT DATA that is marked as being PROTECTED CRADA INFORMATION by a PARTY to this CRADA and that would have been PROPRIETARY INFORMATION had it been obtained from a non-federal entity.

1.13. "SUBJECT DATA" means all recorded information first produced in the performance of a work statement (Appendix B) under this CRADA, both processed and unprocessed generated from modeling and prototype implementation, and can be numeric, alphanumeric, text, photographs, or other recorded forms.

1.14. "SUBJECT INVENTION" means any INVENTION conceived or first actually reduced to practice in the performance of a work statement (Appendix B) under this CRADA.

1.15. "UNLIMITED RIGHTS" means the right to use, modify, reproduce, release, perform, display, or disclose SUBJECT DATA in whole or in part, in any manner and for any U.S. Government purpose whatsoever, and to have or authorize others to do so.

Article 2. Cooperative Research.

2.1. The purpose and object of this CRADA is to provide for the sharing of information and joint conduct of research and development investigations related to techniques and methods for controlling aquatic pest species in public waters related to increasing aquatic wildlife habitat. The scope and obligations of the PARTIES pursuant to this CRADA are itemized in Appendix A. Each PARTY hereto agrees to utilize whatever personnel, facilities, equipment, skills, know-how, and information they consider necessary, consistent with their own policies, missions, requirements, and available resources.

2.1.1 Non-Party Sponsor. UNT and ERDC-EL may agree to collaborate on research and development investigations funded via UNT from a non-PARTY sponsor who has a separate written research agreement with UNT. Collaboration between UNT and ERDC-EL under this CRADA is contingent upon receiving advanced funding for EDC-EL's use. Termination of a sponsored research agreement is cause to concurrently terminate the PARTIES' obligations to perform CRADA work statements.

2.2. Work Statements. Specific collaborative studies consistent with the scope and obligations set forth in Appendix A shall be documented in work statements executed as amendments to this CRADA as set forth in Article 8.7 and shall be subject to the terms and conditions of this CRADA. All work statements shall include a description of the tasks to be performed by each PARTY, the products to be delivered, the schedule, and any other particulars deemed necessary

by the PARTIES. If any services to be performed by the ERDC-EL require reimbursement, the work statement shall also specify the estimated cost and payment schedule for the work to be performed. UNT understands and agrees that 15 U.S.C. § 3710a permits Federal laboratories to provide personnel, services, facilities, equipment, intellectual property, and other resources toward the conduct of research under a CRADA, but specifically prohibits the transfer of funds to the non-Federal UNT under the CRADA. An initial work statement is included at Appendix B. Article 2.6 refers to all financial obligations associated with work statements which include reimbursable funds by UNT.

2.3. Review of Work. Periodic discussions shall be held between ERDC-EL and UNT personnel for the purpose of reviewing the progress of work, as required. It is understood that the nature of this sponsored research is such that completion within the period of performance specified, or within the limits of financial support allocated, cannot be guaranteed. Accordingly, it is agreed that all sponsored research is to be performed on a best efforts basis.

2.4. Technical Management. The Technical Managers for each PARTY shall be identified in each work statement executed as amendments to this CRADA as set forth in each work statement. These individuals will be responsible for the scientific and technical conduct of this project for their respective organizations. If any of the Technical Managers are unable to serve as technical managers during the term of the CRADA, UNT or ERDC-EL will advise the other in writing of a successor.

2.5. Scope Change. If at any time either technical representative determines that the research data dictate a substantial change in the direction of the work, the PARTY shall promptly notify the other PARTY, and the PARTIES shall make a good faith effort to agree on any necessary written changes to a work statement.

2.6. Financial Obligations.

2.6.1. Unless otherwise mutually agreed to between the PARTIES in a work statement, each PARTY shall be responsible to pay all costs of labor, supplies, materials, equipment, overhead, and other expenses, direct and indirect, which are incurred by such PARTY in connection with this CRADA, necessary to the performance of specific work as agreed to by both PARTIES.

2.6.2. In the event the PARTIES mutually agree in a work statement that UNT will reimburse ERDC-EL, such reimbursement will occur as set forth in this Section 2.6.2. The cost of labor, supplies, materials, equipment, overhead, and other expenses, direct and indirect, computed in accordance with ERDC-EL standard accounting procedures which are incurred by ERDC-EL in connection with this CRADA, necessary to the performance of specific work as agreed to by both PARTIES, are chargeable to UNT. Prior to the commencement of any agreed upon work

by ERDC-EL, UNT will deposit with the ERDC Disbursing Officer sufficient funds to cover the estimated cost of the specific work to be performed. To initiate the work effort, funds must be provided in advance. Progressive deposits may be made during the course of this CRADA according to the schedule agreed upon in the work statement; however, at no time shall the costs incurred by the ERDC-EL exceed the funds deposited by UNT. Any funds on deposit over and above the total cost incurred will be refunded within 90 days after determination of final costs.

2.6.3. Many financial management systems, including that used by the United States Army Corps of Engineers, require that the employer's tax identification number (EIN) be entered during setup of a new account. Accordingly, this information is provided below:

ERDC EIN: 62-1642142

UNT EIN: 1-75-6002149

2.6.4. In order for the work effort to be commenced in time, funds must be provided in advance. (a) Checks should be mailed thirty days in advance and made payable to "Treasury of the United States – ERDC-EL" and forwarded to:

United States Army Engineer Research and Development Center
ATTN: CEERD-RM-FA/Cecilia Cole
3909 Halls Ferry Road
Vicksburg, Mississippi 39180-6199

The following information must be included with the check:

Point of contact: ERDC-EL, Dr. Gary O. Dick, CEERD-EE-A

Purpose of funds: CRADA-14-EL-00, University of North Texas, "Techniques and Methods for Controlling Aquatic Pest Species in Public Waters."

(b) Wire Transfer – In order for the work effort to be commenced in time, wire transfer funds must be received two weeks in advance. For wire transfer information, email Cecilia.C.Cole@usace.army.mil or Laverne.D.Green@usace.army.mil.

Article 3. Data Rights and Publication.

3.1. Rights. UNT understands and agrees that ERDC-EL shall not disclose to UNT SUBJECT DATA or any other information developed or compiled by ERDC-EL that is identified as classified or controlled unclassified. Uncontrolled unclassified SUBJECT DATA that is developed or compiled under this CRADA shall be prepared, analyzed, shared, and mutually interchanged by the PARTIES. However, such uncontrolled unclassified SUBJECT DATA shall not be disclosed to any third party without mutual consent of the PARTIES to this CRADA, except that ERDC-EL may disclose non-proprietary SUBJECT DATA when required to do so

for government purposes provided that UNT may disclose SUBJECT DATA to a non-Party sponsor described in Article 2.1.1 or as required by Texas Statutes.

3.2. PROPRIETARY INFORMATION.

3.2.1. ERDC-EL agrees that any PROPRIETARY or BUSINESS CONFIDENTIAL INFORMATION furnished by UNT to ERDC-EL under this CRADA, or in contemplation of this CRADA, shall be used, reproduced, and disclosed by ERDC-EL in accordance with the Trade Secrets Act (18 U.S.C. § 1905) and only for the purpose of carrying out this CRADA, unless written consent to such release is obtained from UNT.

3.2.2. All PROPRIETARY INFORMATION exchanged between the PARTIES (e.g., documents, descriptions, drawings, photographs, tapes, e-mail, or other media), will be clearly identified and marked with an appropriate notice on each page.

3.2.3. Information imparted orally shall not be protected under this paragraph, unless such information is subsequently reduced to tangible form within thirty (30) days of disclosure and a copy thereof furnished to the PARTY receiving the PROPRIETARY INFORMATION.

3.3. PUBLICATIONS. The PARTIES agree that the results of research performed under this CRADA may be published jointly or separately by either PARTY, subject to the terms of the other parts of this Agreement and with the following clarifications:

3.3.1. Scientific Publications. For technical media such as peer-reviewed journals, scholarly books\chapters, conference paper\presentations, and similar publications, the PARTY wishing to publish will confer and consult prior to the publication of SUBJECT DATA to ensure that no PROPRIETARY or BUSINESS CONFIDENTIAL INFORMATION is released and that patent rights are not jeopardized. It is agreed that, prior to either PARTY submitting a manuscript for review or publication containing results of research under this CRADA, a copy of the manuscript will be submitted to the other PARTY at least thirty (30) days prior to being submitted for publication. If any publication contains material subject to copyright, it will be handled in accordance with Article 4.12. Any issues with the manuscript that may raise issues with the reviewing PARTY will be communicated within thirty (30) days to the other PARTY with every effort to resolve in a timely manner.

3.3.2. Public Information/Marketing. To publish any type of information about the CRADA's intent or results in news media, including print materials, broadcast news, Internet, social networks, videotape productions, marketing materials, etc. produced during the active CRADA, each PARTY agrees to coordinate with the other PARTY prior to any information release, to include interviews with news reporters, live or through electronic contact. This requirement also includes any media contacts made as a result of publications described in paragraph 3.3.1. Prior to either PARTY publicly releasing information to non-peer-reviewed

media, the proposed content will be submitted to the other PARTY at least thirty (30) days in advance. In the event of a scientific breakthrough or other time-sensitive circumstance, the PARTY may request expedited approval of information release through the other PARTY'S authorized media agent.

3.3.3. Photography. During all phases of the research, from initial testing to validation, each PARTY, or its representative, who is present during bench or field work, may provide visual documentation using digital photography at a resolution no less than 200 dots per inch (dpi), with 300 dpi considered optimal. The resulting high-resolution photographic files will be shared between PARTIES as originally taken, such as, in jpeg or tiff format, and not at a lower resolution through media such as Microsoft Word or PowerPoint. Videotaping is not a requirement unless otherwise specified; however, if a PARTY chooses to videotape portions of the research, digital files will be made available to the other PARTY, subject to all considerations for PROPRIETARY or BUSINESS CONFIDENTIAL INFORMATION and ensuring patent rights are not jeopardized. All such releasable files will be available upon request from either PARTY to the other PARTY.

3.3.4. Awards\Recognitions. Award nominations for new science or technology resulting from this CRADA will give credit to each PARTY and will be submitted by the nominating PARTY to the other PARTY for review and comment at least thirty (30) days from the award's submittal deadline. In the event the research wins a major award or recognition, the PARTIES will jointly accept any public presentation and will be featured as PARTIES in any media news releases or postings.

3.4. PROTECTED CRADA INFORMATION. Pursuant to 15 U.S.C. § 3710a (c) (7) (B), with respect to information resulting from the performance of this CRADA that would be PROPRIETARY or CONFIDENTIAL if the information had been obtained from UNT, ERDC-EL may provide appropriate protection against the dissemination of such information, including exemption from the Freedom of Information Act (5 U.S.C. § 552a).

3.4.1. Each PARTY may designate as PROTECTED CRADA INFORMATION any SUBJECT DATA produced by its employees; and, with the agreement of the PARTY initially developing the information, mark any SUBJECT DATA produced by that PARTY's employees. All such designated PROTECTED CRADA INFORMATION shall be appropriately marked.

3.4.2. For a period of five years from the date PROTECTED CRADA INFORMATION is produced, the PARTIES agree not to further disclose such information except as:

- (a) Necessary to perform this CRADA;
- (b) Provided in Article 3, Data Rights and Publication;

- (c) Requested by ERDC-EL to be provided to other government facilities for government use only with the same protection in place;
- (d) Mutually agreed by the PARTIES in advance;
- (e) Required by Texas Statutes, Federal law, or by court order.

3.4.3. The obligations of 3.4.2 above shall end sooner for any information that shall become publicly known without the fault of any PARTY, is otherwise known to a PARTY without restriction as to use or disclosure, shall come into a PARTY's possession without breach by that PARTY of the obligations of 3.4 above, or shall be independently developed by a PARTY's employees who did not have access to PROTECTED CRADA INFORMATION.

3.5. ERDC-EL shall have UNLIMITED RIGHTS in all SUBJECT DATA produced or provided by the PARTIES under this CRADA, except for information marked as being copyrighted, PROTECTED CRADA INFORMATION, or PROPRIETARY or BUSINESS CONFIDENTIAL INFORMATION.

Article 4. Patent and Other Intellectual Property Rights.

4.1. Limited Scope. The United States Government shall retain ownership in any intellectual property to which it has title prior to this CRADA. Likewise, UNT shall retain ownership in any intellectual property to which it has title prior to this CRADA.

4.2. Reporting. ERDC-EL shall report to UNT within ninety (90) days of each SUBJECT INVENTION developed under this CRADA reported to ERDC-EL by its employees. UNT shall report to ERDC-EL within ninety (90) days of each SUBJECT INVENTION reported to UNT by any of its employees.

4.3. UNT Employee INVENTIONS. ERDC-EL, on behalf of the United States Government, waives any ownership rights the United States Government may have in SUBJECT INVENTIONS MADE by UNT employees and agrees that UNT shall have the option to retain title in any such employee SUBJECT INVENTION and to obtain patents therein. UNT shall notify ERDC-EL within ninety (90) days of reporting the invention to ERDC-EL of its election of this option and shall have the right to timely file patent applications on such SUBJECT INVENTION at its own expense. UNT agrees to grant to the United States Government on UNT's employee's SUBJECT INVENTIONS a non-exclusive, nontransferable, irrevocable, paid-up license in the patents covering such SUBJECT INVENTIONS to practice or have practiced, throughout the world by or on behalf of the United States Government for research and other GOVERNMENT PURPOSES. Such non-exclusive license shall be evidenced by a Confirmatory Instrument prepared by UNT in a form acceptable to ERDC-EL. With regard to SUBJECT INVENTIONS to which UNT retains right and title and files applications, such

applications shall be filed prior to the running of any statutory bar period, priority period, or any applicable filing deadline that will bar the granting of a patent or other statutory rights on the INVENTION.

4.4 ERDC-EL Employee INVENTIONS.

4.4.1 ERDC-EL, on behalf of the United States Government, shall have the initial option to retain title to each SUBJECT INVENTION MADE by its employees and to obtain patents therein. ERDC-EL shall notify UNT within ninety (90) days of reporting the invention to UNT of its election of this option and shall have the right to timely file patent applications on such SUBJECT INVENTION at its own expense. UNT shall have the option to negotiate a license on any such INVENTIONS including the option to choose an exclusive license for a pre-negotiated field of use.

4.4.2 Pursuant to 15 USC 3710a(b)(1)(A), Any license granted by the laboratory shall be subject to the reservation by the United States Government of an irrevocable, paid-up right to practice or have practiced the SUBJECT INVENTION on behalf of the United States Government for government purposes.

4.4.3 Pursuant to 15 USC 3710a(b)(1)(B), If a laboratory assigns title or grants an exclusive license to a SUBJECT INVENTION, the Government shall retain the right

- a. to require the collaborating party to grant to a responsible applicant a nonexclusive, partially exclusive, or exclusive license to use the invention in the applicant's licensed field of use, on terms that are reasonable under the circumstances; or
- b. if the collaborating party fails to grant such a license, to grant the license itself.

4.5 UNT Employee/ERDC-EL Employee Joint INVENTIONS.

4.5.1 Joint SUBJECT INVENTIONS shall be jointly owned if UNT files the patent application on the joint SUBJECT INVENTION. UNT shall be responsible for filing United States Patent Applications for joint SUBJECT INVENTIONS in a timely manner. If UNT does not file a United States Patent Application on a joint SUBJECT INVENTION within six (6) months after disclosure to either PARTY, and ERDC-EL desires to file a patent application, UNT agrees to assign its rights in the INVENTION to ERDC-EL at no cost and ERDC-EL will file a United States Patent Application on such joint SUBJECT INVENTION. ERDC-EL, in turn, agrees to grant UNT a royalty-free non-exclusive license or to negotiate an exclusive license for a reasonable fee as set forth in paragraph 4.8 below. The non-filing PARTY shall reasonably cooperate and assist the filing PARTY in perfecting the patent application, and the Filing PARTY shall have the right to control the prosecution

of the United States Patent Application. Either PARTY retains an associate power of attorney on joint SUBJECT INVENTIONS filed as patent applications by other PARTIES to this CRADA.

4.5.2 Pursuant to 15 USC 3710a(b)(1)(A), Any license granted by the laboratory shall be subject to the reservation by the United States Government of an irrevocable, paid-up right to practice or have practiced the SUBJECT INVENTION on behalf of the United States Government for government purposes.

4.5.3 Pursuant to 15 USC 3710a(b)(1)(B), If a laboratory assigns title or grants an exclusive license to a SUBJECT INVENTION, the Government shall retain the right

- a. to require the collaborating party to grant to a responsible applicant a nonexclusive, partially exclusive, or exclusive license to use the invention in the applicant's licensed field of use, on terms that are reasonable under the circumstances; or
- b. if the collaborating party fails to grant such a license, to grant the license itself.

4.6 Patent Applications. Patent applications and other INTELLECTUAL PROPERTY applications on SUBJECT INVENTIONS shall be filed prior to the running of any statutory bar period, priority period, or applicable filing deadline that would bar the granting of a patent or other INTELLECTUAL PROPERTY rights on a SUBJECT INVENTION.

4.6.1 UNT shall enter into agreements with its employee, contractor, and subcontractor inventors to ensure assignment of their INVENTIONS to UNT and to ensure cooperation with preparation and filing of patent applications on their INVENTIONS.

4.6.2 The PARTY filing an application under Article 4.5 shall provide the other PARTY with one copy of the application at least thirty (30) days prior to filing, and shall use best efforts to provide the other PARTY the right to inspect and copy documents relevant to the application.

4.6.3 A first PARTY having rights in a SUBJECT INVENTION may elect not to file patent applications thereon in particular country(ies) outside the United States, provided it so notifies the other PARTY in writing within ninety (90) days from the date it reports the SUBJECT INVENTION to the other PARTY or such later date on which it acquires such rights in the SUBJECT INVENTION, provided that such notice shall be provided in a reasonable time to permit the other PARTY to establish patent rights in the SUBJECT INVENTION. Thereafter, the other PARTY may elect to file such applications on the SUBJECT INVENTION in the identified countries, and the first PARTY shall assign its interests in the SUBJECT INVENTION in those identified countries to the other PARTY. This assignment shall be subject to the retention by the first PARTY of a non-exclusive,

irrevocable, paid-up license to practice, or have practiced, the SUBJECT INVENTION in the identified countries in the case of UNT and throughout the world in the case of ERDC-EL.

4.7 Patent and Other Intellectual Property Expenses. The expenses attendant to the filing, prosecution, issuance, and maintenance of patent and intellectual property applications as specified above shall be borne by the PARTY filing the patent or intellectual property application.

4.8 Royalties to ERDC-EL. In this or any foreign country in which UNT obtains title to a patent or other intellectual property rights grant, on any SUBJECT INVENTION made solely by ERDC-EL employees or made jointly by ERDC-EL and UNT employees, UNT shall pay to ERDC-EL a royalty based on a reasonable rate applied to a royalty base. Both the royalty rate and the royalty base shall be negotiated in good faith. The royalty rate and the royalty base shall fairly reflect the relative contributions of the parties to the making of the SUBJECT INVENTION and to the work under this CRADA, patent prosecution expenses, the risks incurred by UNT, and the costs of subsequent research and development needed to bring the SUBJECT INVENTION to the point of practical application. Any such royalty payments should be made payable to "DFAS-Columbus" and forwarded to:

Regular U.S. Postal Mail:

DFAS-CO-JDCBB
P.O. BOX 182204
COLUMBUS, OHIO 43218-2204

Or for FEDEX Mail:

DFAS-CO-JDCBB
3990 EAST BROAD STREET
BUILDING 21
COLUMBUS, OHIO 43213-1152

DFAS Recipients Name - TOM TRIPLETT
Phone: (614) 701-5442

A report shall accompany each payment identifying this CRADA and stating the manner in which the amount of the funds was calculated. Copies of the report should also be provided to:

Director for Technology Transfer
Office of the Deputy Assistant Secretary of the Army (Research & Technology)
ATTN: SAAL-ZT (Suite 513A-01)
Tylar Temple
5th Floor
2800 Crystal Drive
Arlington, VA 22202

United States Army Engineer Research and Development Center
ATTN: CEERD-OT (Eric Fox)
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

4.9 Prosecution of Patent and Intellectual Property Applications. Both PARTIES agree to cooperate with the other in the preparation, filing, and prosecution of patent or other INTELLECTUAL PROPERTY applications on any SUBJECT INVENTION in this or any foreign country. Each PARTY shall provide the other PARTY with a copy of any patent or other INTELLECTUAL PROPERTY application on any SUBJECT INVENTION filed in this or a foreign country within sixty (60) days after filing, along with the power to inspect the patent or other INTELLECTUAL PROPERTY application.

4.10 Transfer of Rights to Inventors. In this or any foreign country where none of the PARTIES to this CRADA elects to file a patent or other INTELLECTUAL PROPERTY rights application on a SUBJECT INVENTION, any or all of the PARTIES may transfer their patent or other INTELLECTUAL PROPERTY rights to the employee inventor(s) with the reservation of a non-exclusive, non-transferable, irrevocable, world-wide, paid-up license to practice or have practiced the INVENTION by or on behalf of the PARTIES.

4.11 Maintenance Fees. The fees payable to a patent office in order to maintain the intellectual property will be paid by the PARTY owning the patent, at its option. If that PARTY decides not to pay the maintenance fees, it shall notify the other PARTY, who may pay the maintenance fees if it desires to maintain the enforcement of the patent. If neither PARTY wishes to pay maintenance fees, the employee inventor(s) will be given a timely notice and opportunity to do so.

4.12 Copyrights.

4.12.1 Works Created by UNT. Ownership to copyrights for SUBJECT DATA including original works of authorship created solely by employees of UNT or for hire by UNT in the course of performance of work under this CRADA (subject works) is retained by UNT. UNT shall mark subject works with a copyright notice showing UNT as an owner and shall have the option to register the copyright at the expense of UNT. UNT grants to the United States Government a royalty free, worldwide, non-exclusive, irrevocable, paid-up license to use, modify, prepare derivative works, reproduce, distribute, perform, or display works created by UNT under this CRADA. UNT agrees to acquire rights from employees and contractors as needed to implement this license grant by direct assignment from the owner of rights in subject works to UNT as appropriate.

4.12.2 Joint Works. Ownership of copyrights as may be available under applicable laws for joint works prepared by employees of ERDC-EL and UNT in the course of performance of work under this CRADA are retained solely by UNT. UNT grants to the United States Government a royalty free, worldwide, non-exclusive, irrevocable, paid-up license to use,

modify, prepare derivative works, reproduce, distribute, perform, or display works created by UNT under this CRADA.

4.12.3 Copyright Notice. If either PARTY publishes copyrighted SUBJECT DATA then, to the extent permitted by this CRADA, it shall affix the applicable copyright notice (see 17 U.S.C. §§ 401, 402, and 403) and an acknowledgment of the scientific and technical contributions of the other PARTY.

4.13 Trademark Qualifying Notice. Prior to the use of the trademark or service mark obtained by the Government or UNT, the Parties will negotiate any reasonable qualifying language that must accompany the trademark or service mark.

Article 5. Representations and Warranties.

5.1 Representations and Warranties of ERDC-EL. ERDC-EL hereby represents and warrants to UNT as follows:

5.1.1 Organization. ERDC-EL is a research and development center of the Department of Army and is wholly owned by the United States Government. ERDC-EL's substantial purpose is the performance of research, development, or engineering by employees of said Government.

5.1.2. Mission. The performance of the activities specified by this CRADA is consistent with the mission of ERDC-EL.

5.1.3. Power and Authority. All prior reviews and approvals required by regulations or law have been obtained by ERDC-EL prior to the execution of this CRADA. The ERDC-EL official executing this CRADA has the requisite authority to do so.

5.2. Representations and Warranties of UNT. UNT hereby represents and warrants to ERDC-EL as follows:

5.2.1. Corporate Organization. UNT, as of the date hereof, is an institution of higher education in the State of Texas created by the Texas Legislature and given those powers and responsibilities enumerated in the Texas Statutes to include entering into contracts with public agencies, private corporations, or other persons.

5.2.2. Statement of Ownership. UNT is not a foreign owned entity. UNT is not considered to be a small business as defined by the United States Small Business Administration.

5.2.3. Power and Authority. UNT has the requisite power and authority to enter into this CRADA and to perform according to the terms thereof.

5.2.4. Due Authorization UNT has taken all actions required to be taken by law to authorize the execution and delivery of this CRADA.

5.2.5. No Violation. The execution and delivery of this CRADA does not knowingly contravene any material provision of, or constitute a material default under any material CRADA binding on UNT or any valid order of any court, or any regulatory agency or other body having authority to which UNT is subject.

5.2.6. UNT hereby represents and warrants that it are not suspended, proposed for debarment or debarred from eligibility for federal procurements (i.e., contracts, grants, cooperative agreements). UNT hereby agrees to make timely notification to the ERDC-EL duly authorized representative named in Article 8.10 should this representation change.

Article 6. Termination.

6.1. Termination by Mutual Consent. UNT and ERDC-EL may elect to terminate this CRADA, or portions thereof, at any time by mutual written consent. In such event the PARTIES shall specify in writing the disposition of all tangible property, intellectual property, and other results of work accomplished or in progress, arising from or performed under this CRADA.

6.2. Termination by Unilateral Action.

6.2.1 Written Notice. Either PARTY may unilaterally terminate this entire CRADA at any time by giving the other PARTY written notice not less than thirty (30) days prior to the desired termination date, provided, however, that no PARTY shall have the right to terminate its obligation under Article 3, Data Rights and Publication.

6.2.2. ERDC-EL may terminate this CRADA immediately if UNT transfers the CRADA or any of its rights and obligations to another entity without ERDC-EL's prior written approval or if direct or indirect control of UNT is transferred to another entity without ERDC-EL's prior written consent.

6.2.3 Data Rights. If either PARTY unilaterally terminates this CRADA pursuant to 6.2.1 above, each PARTY shall return any and all SUBJECT DATA developed by the other PARTY which it may have in its possession and will retain no rights to publish said SUBJECT DATA developed by the other PARTY after the effective date of the unilateral action.

6.2.4 New Commitments. ERDC-EL shall make no new commitments after receipt of a written termination notice from UNT and shall, to the extent feasible, cancel all outstanding commitments and contracts by the termination date.

6.3. Termination Costs. Unless otherwise explicitly provided in this Agreement, each party shall be solely responsible for all of the costs it has incurred under this Agreement through the

effective date of termination. Each PARTY is responsible for any costs it incurs after the effective date of termination.

Article 7. Liability.

7.1. Liability. Each PARTY shall be responsible for the action of its employees or its agents. To the extent allowed by the laws and the Constitution of the State of Texas, UNT shall indemnify and hold harmless the Government for any loss, claim, damage, expense, or liability of any kind involving an employee or agent of UNT arising in connection with the performance of work under this Agreement, except to the extent that such loss, claim, damage, or liability arises from the negligence of the Federal Laboratory or its employees. The Government's liability for the loss of property, personal injury or death, or otherwise arising out of any negligent act or omission of its employees in connection with the performance of work under this Agreement shall be governed by the Federal Tort Claims Act, 28 U.S.C. § 2671-2680.

7.2. No Warranty. Except as specifically stated herein, neither PARTY makes any express or implied warranty as to any matter whatsoever, including the conditions of the research or any INVENTION or project.

7.3. Force Majeure. Neither PARTY shall be considered in default for any unforeseeable event beyond its reasonable control not caused by the fault or negligence of such PARTY, which causes such PARTY to be unable to perform its obligations under this CRADA (and which it has been unable to overcome by the exercise of due diligence), including, but not limited to, flood, drought, earthquake, storm, fire, pestilence, lightning and other natural catastrophes, epidemic, war, riot, civic disturbance or disobedience, strikes, labor dispute or failure or threat of failure, or sabotage, or any order or injunction made by a court or public agency. In the event of the occurrence of such a force majeure event, the PARTY unable to perform shall promptly notify the other PARTY. It shall further use its best efforts to resume performance as quickly as possible and shall suspend performance only for such period of time as is necessary as a result of the force majeure event.

7.4. Products Liability. To the extent allowed by the laws and Constitution of the State of Texas, UNT agrees to indemnify and hold harmless the Government for any loss, claim, damage, expense, or liability of any kind occurring as a result of the making, using, or selling of a product, process, or service by or on behalf of UNT its assignees and licensees, which was derived from work performed under this Agreement. In respect to this provision, the government shall not be considered an assignee or licensee of UNT, as a result of reserved Government rights under this Agreement. The Government's liability for losses, claims, damages, or expenses of UNT occurring as a result of the making, using, or selling of a product, process, or service by or

on behalf of the Government shall be governed by the provisions of the Federal Tort Claims Act, 28 U.S.C. § 2671-2680.

Article 8. Miscellaneous.

8.1. Officials Not to Benefit. No member of, or delegate to the United States Congress, or resident commissioner, shall be admitted to any share or part of this CRADA, nor to any benefit that may arise therefrom; but this provision shall not be construed to extend to this CRADA if made with a corporation for its general benefit.

8.2. Governing Law. The technical validity, performance, and effect of this CRADA for all purposes shall be governed by the substantive and procedural laws applicable to the Government of the United States.

8.3. Entire CRADA. This CRADA constitutes the entire agreement between the PARTIES concerning the subject matter hereof and supersedes any prior understanding or written or oral agreement relative to said matter.

8.4. Headings. Titles and headings of the sections and subsections of this CRADA are for the convenience of references only and do not form a part of this CRADA and shall in no way affect the interpretation thereof.

8.5. Waivers. None of the provisions of this CRADA shall be considered waived by any PARTY hereto unless such waiver is given in writing to all other PARTIES. The failure of any PARTY to insist upon strict performance of any of the terms and conditions hereof, or failure or delay to exercise any rights provided herein or by law, shall not be deemed a waiver of any rights of any PARTY hereto.

8.6. Severability. The illegality or invalidity of any provisions of this CRADA shall not impair, affect, or invalidate the other provisions of this CRADA.

8.7. Amendments and Modifications. If either PARTY desires a modification in this CRADA, the PARTIES shall, upon reasonable notice of the proposed modification by the PARTY desiring the change, confer in good faith to determine the desirability of such modification. Such modification shall not be effective until a written amendment is signed by all the PARTIES hereto by their representatives duly authorized to execute such amendment. All amendments will be considered integral parts of this CRADA and will be included in an appendix specifically for said amendments.

8.8. Title to Property. The purchase or use of any property to carry out this CRADA does not affect the ownership rights that would otherwise apply. All equipment developed or acquired under this CRADA shall be the property of the PARTY developing or acquiring such equipment. However, property directly provided under this CRADA by either PARTY, regardless of who uses the property in the performance of the work, shall remain the property of the providing PARTY unless other disposition is mutually agreed upon in writing by the PARTIES. The PARTY holding the title to the equipment utilized in carrying out this CRADA is responsible for the maintenance of the equipment and the costs of transportation to and from the site where it will be used.

8.9. Assignment. Neither this CRADA nor any rights or obligations of any PARTY hereunder shall be assigned or otherwise transferred by either PARTY without the prior written consent of the other PARTY. In no event shall any rights or obligations of this CRADA be assigned or transferred to a PARTY not a citizen and resident of the United States of America.

8.10. Official notices pertaining to amendments, disputes, or termination shall be signed by a duly authorized representative and shall be delivered by United States Certified mail, or other form of express mail service. All such official notices shall be addressed as follows:

For ERDC-EL: U.S. Army Engineer R&D Center
 ATTN: CEERD-OT (Eric Fox)
 3909 Halls Ferry Road
 Vicksburg, MS 39180-6199
 (601) 634-4113
 Eric.L.Fox@usace.army.mil

For UNT: University of North Texas
 Barbara Lindley, Sr. Contract Manager
 Office of Research Services
 1155 Union Circle #305250
 Denton, Texas 76203-5017
 940.565.3940
 Barbara.Lindley@unt.edu

Either PARTY may change such address by giving notice to the other PARTY in this manner.

8.11. General written notices pertaining to the scientific and technical execution of the work under this CRADA, such as progress reports, may be signed by the representatives named in the

work statement provided as an appendix. Either PARTY may change its authorized representative by giving notice to the other PARTY in this manner.

8.12. Independent Contractors. The relationship of the PARTIES to this CRADA is that of independent contractors and not as agents of each other or as joint ventures or as business partners. Each PARTY shall maintain sole and exclusive control over its personnel and operations.

8.13. Use of Name or Endorsements. UNT shall not use the name or any trademarks of ERDC-EL, the United States Army Corps of Engineers, or the United States Government on any product or service that is directly or indirectly related to either this CRADA or any patent license or assignment agreement which implements this CRADA unless permission has been obtained from the Program Manager of the Army Trademark Licensing Program. ERDC-EL shall assist in obtaining such approval as appropriate. By entering into this CRADA, ERDC-EL does not directly or indirectly endorse any product or service provided, or to be provided, by UNT, its successors, assignees, or licensees. UNT shall not in any way imply that this CRADA is an endorsement of any such product or service.

8.14. Covenant Against Contingent Fees. UNT warrants that no person or selling agency has been employed or retained to solicit or secure this CRADA upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by UNT for the purpose of securing business. For breach or violation of this warranty, ERDC-EL shall have the right to annul this CRADA without liability, or, in its discretion, to add to the CRADA price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

8.15. Preference for United States Industry. The PARTIES agree that a purpose of this CRADA is to provide substantial benefit to the United States economy. Accordingly, UNT agrees that any product MADE or produced under this CRADA, used or sold by UNT or any licensee or sub-licensee shall be manufactured substantially in the United States.

8.16. Access to Government Automated Information Systems. Both PARTIES agree that any non-Government persons working under this CRADA (including United States citizens) who require access to Government Automated Information Systems (stand alone computers, network computers/system, email) shall, at a minimum, be designated into a ADP-III position (non-sensitive) in accordance with DoD regulation 5220-22-R, *Industrial Security*.

8.17. Army Limited-Access Databases. This agreement and its appendices, and modifications if any, may be maintained on US Government limited access, password-protected websites for

program management and record keeping purposes. UNT acknowledges and agrees to allow disclosure of this Agreement to third party contractors of the Government to carry out these program management purposes, on a need-to-know basis, provided such contractors are legally bound to confidentiality.

Article 9. Relationships with Foreign Entities.

9.1. FOREIGN NATIONALS Participation. Travel and/or visits by FOREIGN NATIONALs to ERDC-EL facilities related to CRADA coordination, negotiation, or execution will be governed by the provisions of Army Regulation 380-10, *Disclosure of Information and Visits of Foreign Nationals*. Travel and/or visits by FOREIGN NATIONALs will be conducted with Headquarters, United States Army Corps of Engineers, Foreign Disclosure Office (CEMP-OI-FL), and follow procedures issued by that office. UNT agrees to furnish the name of any FOREIGN NATIONAL who may be involved in the work performed under this CRADA, along with documentation to verify that each was legally admitted into the United States and has authority to work and/or attend school in the United States. This information should be forwarded to:

Director
United States Army Engineer Research and Development Center
ATTN: CEERD-SE (Linda McGowan)
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

9.2. Export Control Laws. The PARTIES understand that this CRADA may involve technology and SUBJECT DATA that is subject to export control laws and regulations, and each PARTY is responsible for its own compliance with such laws and regulations. Consideration has been given to the provisions of Executive Order 12591. If it is determined that, under the International Traffic Arms Regulation or Export Administration Regulation, controls are required on technology that may be transferred under this CRADA, such controls shall be appropriately documented. Nothing in this CRADA waives any such statutory or regulatory requirement.

Article 10. Alternative Dispute Resolution.

10.1. Settlement. In the event that a dispute arises under this CRADA which cannot be readily resolved, it shall be submitted jointly to the signatories of this CRADA. The PARTIES shall seek in good faith to resolve the issue through negotiation or other forms of non-binding alternative disputes resolution mutually acceptable to the PARTIES. A joint decision of the signatories or their designees shall be the final and binding disposition of such dispute, with no further review. If the PARTIES cannot reach a joint settlement, either Party may terminate this Agreement immediately pursuant to Article 6.2. To be clear, termination of this Agreement is

the only remedy or recourse to either PARTY in the event of an irresolvable dispute.

10.2. Continuation of Work. Pending the resolution of any dispute or claim pursuant to this Article, the PARTIES agree that performance of all obligations shall be pursued diligently.

Article 11. Surviving Provisions.

11.1. The Articles covering Definitions, Financial Obligations, Data Rights and Publications, Patent and Other Intellectual Property Rights, Representations and Warranties, Liability, Amendments and Modifications, Notices, Transfer to Foreign-owned or Foreign-controlled Entities, Alternative Dispute Resolution, and Surviving Provisions shall survive the completion, termination, or expiration of this CRADA.

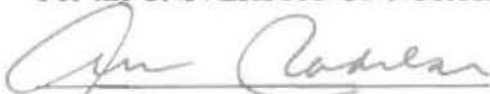
Article 12. Duration of CRADA and Effective Date.

12.1. It is mutually recognized that the development program cannot be rigidly defined in advance and that the contemplated time periods for completion of each phase are good faith guidelines subject to adjustment by mutual agreement, to fit circumstances as the development program proceeds. In no case will this CRADA extend beyond FIVE (5) YEARS, unless it is amended in accordance with Article 8.7.

12.2. Effective Date. This CRADA shall enter into force following last signature date.

IN WITNESS WHEREOF, the PARTIES have caused this CRADA to be executed by their duly authorized representatives as follows:

For the UNIVERSITY OF NORTH TEXAS:



Ann Rodela
Assistant Vice President, Research/Sponsored Programs

Date: 6.16.14

**For the US ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER,
ENVIRONMENTAL LABORATORY:**



BETH C. FLEMING, PhD
DIRECTOR

Date: 6/30/14

APPENDIX A
COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT
BETWEEN
UNITED STATES ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER
ENVIRONMENTALLABORATORY
AND
UNIVERSITY OF NORTH TEXAS FOR TECHNIQUES AND METHODS
FOR
CONTROLLING AQUATIC PEST SPECIES IN PUBLIC WATERS

Scope of Cooperative Research and Development Program

The purpose of this cooperative research and development agreement is to provide for the joint conduct of research and development investigations related to restoration strategies for aquatic habitat enhancement. This collaboration is within the mission of the Aquatic Ecology and Invasive Species Branch which is to conduct laboratory and field studies on ecological processes and dynamics, impact analysis, habitat evaluation, restoration, inventory, and monitoring on freshwater ecosystems. This is accomplished through quantitative studies at the individual, population, community and ecosystem levels. The respective obligations of the PARTIES in performing the cooperative research and development program are as follows:

ERDC:

- (1) Shall make available laboratory scientists to collect data and conduct collaborative research related to the technical areas listed above.
- (2) Shall provide a scope of work (Appendix B) outlining ERDC-EL's participation with the particular project.
- (3) Shall exchange research study results and technical information related to the technical areas listed above.

UNT:

- (1) Shall make available scientists to collect data and conduct collaborative research related to the technical areas listed above.

- (2) Shall exchange research study results and technical information related to the technical areas listed above.
- (3) Shall provide scientists and/or staff for implementation, monitoring and evaluation of particular project.
- (4) As agreed by both parties, UNT will send funds to ERDC when appropriate for tasks under this CRADA. A scope of work will be approved by authorized representatives of both parties and incorporated by amendment per Section 8.7.

APPENDIX B
COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT
BETWEEN
UNITED STATES ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER
ENVIRONMENTALLABORATORY
AND
UNIVERSITY OF NORTH TEXAS
FOR
TECHNIQUES AND METHODS FOR CONTROLLING AQUATIC PEST SPECIES IN
PUBLIC WATERS

Pursuant to Article 2.2 of this CRADA, this Work Statement defines a particular research activity (consistent with the scope and obligations set forth in Appendix A) to be conducted under the CRADA.

1.0 TITLE:

UNT/ERDC-EL collaborative City of Austin Aquatic and Riparian Vegetation Restoration Project.

2.0 BACKGROUND:

The City of Austin has a goal of restoring and managing aquatic vegetation in Lake Austin and Lady Bird Lake and riparian vegetation along the shoreline of Lady Bird Lake to repair ecosystems that have been disturbed by introductions of *Myriophyllum spicatum*, *Hydrilla verticillata*, and other invasive species. Control methods to remove these species have been implemented, including drawdowns, introduction of *Ctenopharyngodon idella* and herbicide applications, leaving the systems vulnerable to re-infestations and degraded aquatic habitat. Thus, efforts to restore native aquatic vegetation in these lakes in order to retain healthy aquatic ecosystem have been initiated through the installation of native aquatic macrophyte found colonies.

Additionally, removal of trees to afford better viewing of *Tadarida brasiliensis* (Mexican free-tailed bats) from the Congress Street Bridge needs to be addressed by replanting with low-growing riparian vegetation and aquatic natives to forestall erosion. In addition,

control of riparian nuisance species, such as *Arundo donax*, is being implemented; areas treated require evaluation and recommendations for restoration by native aquatic species drafted and implemented.

3.0 PROJECT OBJECTIVE:

The project's purpose is to provide technical assistance to The City of Austin in support of efforts to resort native aquatic and riparian vegetation for Lake Austin and Lady Bird Lake.

These efforts will be conducted by the University of North Texas (UNT) researchers stationed at the Corps of Engineers' Lewisville Aquatic Ecosystem Research Facility (LAERF). The CRADA objective is to provide the UNT researchers with technical assistance in the development of strategies, project implementation, monitoring and evaluation of aquatic plant vegetation restoration on Lake Austin and Lady Bird Lake.

4.0 TECHNICAL MANAGERS:

UNT

Name: Sam Atkinson
 Address: Department of Biology
 1155 Union Circle, #305200
 Denton, Texas 76203-5017
 Telephone: 940-565-2694
 Email: Sam.Atkinson@unt.edu

ERDC

Name: Gary O. Dick
 Address: Lewisville Aquatic Ecosystem Research Facility
 201 East Jones Street
 Lewisville, Texas 75058
 Telephone: 972-436-2215 ext. 225
 Email: garydick@laerf.org

5.0 ERDC TASKS, SCHEDULE, and COST ESTIMATE:

5.0.1 ERDC-EL's obligation is to provide technical assistance to the UNT researchers in evaluation of restoration progress and modification of strategies and approaches as necessary to achieve UNT's task of introducing and restoring Texas native aquatic vegetation in Lake Austin and Lady Bird Lake.

5.0.2 ERDC-EL's obligation is to provide technical assistance to the UNT researchers in the development of strategies and approaches to planting low-growing native riparian shrubs and herbaceous species along Lady Bird Lake.

5.0.3 ERDC-EL will assist with the preparation of project status reports.

6.0 UNT TASKS:

6.0.1 UNT's task is to continue monitoring and providing long-term maintenance of existing founder colonies in Lake Austin and Lady Bird Lake along with installation of additional colonies at appropriate sites in each lake.

6.0.2 UNT's task is to expand emergent species planting at appropriate sites as a mechanism for minimizing shoreline erosion on Lake Austin.

6.0.3 UNT's task is to continue evaluation techniques for deeper water plantings of wild celery and to conduct test plantings of other native aquatic macrophytes using these same techniques.

6.0.4 UNT's task is to plant low-growing native riparian shrubs and herbaceous species along Lady Bird Lake as a mechanism for minimizing shoreline erosion.

6.0.5 UNT's task is to monitor and provide recommendations for restoration of areas along Lady Bird Lake where nuisance species, such as giant cane, are being controlled.

6.0.6 UNT will send funds of \$40,000 to ERDC for ERDC's participation with this particular project as outlined above in Appendix B, section 5.0.

7.0 ESTIMATED CONTRIBUTIONS:

In accordance with DoD policy, DoD is requesting that both the federal and non-federal CRADA UNTs report an estimate of their contributions to the CRADA, both financial and non-financial. Non-financial contributions are defined as: All non-monetary resources devoted to the execution of the subject agreement (e.g. labor, test facility usage, etc.). Information will not be reported by individual organizations, but included in totals for the laboratory-wide annual upward reports.

7.1 ERDC Laboratory:	Financial: \$0.00	Non-financial in-kind - \$1,600
7.2 UNT:	Financial: \$40,000	Non-financial: 0.00



City of Austin Purchasing Office

Certificate of Exemption for Professional Services, Public Health and Safety or Other Exempt Purchase (Non-Competitive)

DATE: 9/25/2018

TO: Purchasing Officer or Designee

PURCHASING POC: Paul Trimble

FROM: Josie Archer, on behalf of Brent Bellinger

DEPT: Watershed Protection

PHONE: 512-974-9735

Chapter 252 of the Local Government Code requires that municipalities comply with the procedures established for competitive sealed bids or proposals before entering into a contract requiring an expenditure unless the expenditure falls within an exemption listed in Section 252.022.

Refer to Local Government Code 252.022 for a complete list of exemptions:

[Link to Local Government Code](#)

The City has selected a vendor for contract award and declares the competitive solicitation procedures in Local Government Code Chapter 252.022 to be exempt for this procurement. This Certificate of Exemption is hereby executed and filed with the Purchasing Office as follows:

1. The undersigned is authorized and certifies that the following exemption is applicable to this procurement.

Please check the criteria listed below that applies to this request:

- ☐ A procurement made because of a public calamity that requires the immediate appropriation of money to relieve the necessity of the municipality's residents or to preserve the property of a municipality.
- ☐ A procurement necessary to preserve or protect the public health or safety of the municipality's residents.
- ☐ A procurement necessary because of unforeseen damage to public machinery, equipment, or other property.
- ☒ A procurement of personal, professional, or planning services
- ☐ Other exemption from Chapter 252.022: _____

2. Describe this procurement

- What it is for and why it is needed?

- This is a professional services contract between Watershed Protection and The University of North Texas (UNT) for the continued restoration of shoreline and aquatic vegetation communities in Austin's reservoirs. This work is a continuation of our collaborative efforts to improve water quality, combat invasive species, protect shorelines from erosion, and enhance habitat for aquatic organisms.
- Through this agreement, we will be able to continue our studies about the best design options to protect vegetation from herbivores, increase areal coverage of desired native vegetation, protect more shorelines, and will begin to study additional benefits provided by the re-vegetation efforts on ecosystem biota. Without continued expansion of our native planting efforts, re-colonization by non-native vegetation and increased erosion of shorelines is likely to be hastened, both of which negatively impact water quality and overall ecosystem quality.

- **For Professional, Personal, or Planning Service Exemptions:**

- Why is the vendor the most qualified to provide the services?
 - The University of North Texas and their staff have successfully applied similar revegetation efforts across the southern United States and possess the personnel, facilities, and expertise to best provide the services desired by Watershed Protection toward our water quality goals. The researchers through UNT have written guidance documents and reports for the Army Corp of Engineers and have applied their techniques throughout reservoirs in the southern United States. New research scientists continue to refine the techniques applied to ensure best odds of success under new conditions and situations.
- Does this vendor have a history of working with the City? If so, was it on this particular service?
 - Yes, UNT has been working on aquatic plant management issues with Watershed Protection since 2006.
- Will this procurement be component of a larger service or phases of service?
 - No, this is a continuation of a MA set to expire on 12/31/2018.
- Is the vendor a City of Austin local vendor?
 - No.
- Does the vendor hold an M/WBE certification with the City, a HUB certification with the State of Texas, or any other minority or women owned certifications?
 - No.
- What qualifications, certifications, or specialized training does the vendor have?
 - Decades of institutional knowledge, numerous Ph.D. level research scientists, expertise in aquatic plant identification, cultivating, and transplanting, knowledge of local conditions and best management practices.
- What is the impact if a contract is not secured with this particular vendor (loss of project timeline, loss of funding etc.)?
 - Our inability to continue this work will leave areas of our reservoirs vulnerable to erosion and invasion by non-native plants. Without re-establishment of native vegetation, hydrilla would have no competitors. Additionally, without re-establishment of native vegetation, aquatic organism populations that prefer aquatic plants as habitat would suffer, leading to a loss of the valuable sport fishery. Additionally, without this contract, more shoreline area would be susceptible to erosion, which would further degrade water quality and recreational enjoyment of our reservoirs. Additionally, funding for shoreline and invasive species management could be lost.

- What other vendors can provide these services and why are they not the best fit for the contract?

- At this time I am unaware of a vendor that can perform the multitude of services, internally, that UNT provides.

○ **Prices were determined to be reasonable based on the following (select all that apply):**

- ☐ Prices are established under a current Cooperative contract.

Notes: At a minimum, note the contract number, contract title, cooperative entity, and government or entity who created the contract.

- ☒ Prices are the same or similar to current City contract.

Notes: MA-6300- PI080000003

- ☐ Prices are the same or similar to current contract with another government.

Notes: At a minimum, note the contract number, title and government that created the contract.

- ☐ Prices are on a current and publicly available list price, for the same or similar products, available to all government and commercial customers.

Notes: At a minimum, note the list price title, source of the list price (catalog and catalog publish date or web address and download date).

- ☐ Prices are established by law or regulation.

Notes: At a minimum, note the legal or regulatory reference that established the prices.

- ☐ Other means of determining Price Reasonableness.

Notes: Describe any other source that was used to establish Price Reasonableness.

* The questions in the form are designed to justify why this purchase should be exempt from a competitive procurement process. Failure to provide adequate documentation to substantiate the request may lead to the request being rejected.

3. Forward the completed and signed Certificate of Exemption to the Purchasing Office along with the following documentation:
- ☒ Scope of Work or Statement of Work (if applicable)
 - ☒ Vendor's proposal/quote (tied into SoW)
 - ☐ Project timeline with associated tasks, schedule of deliverables or milestones, and proposed payment schedule
 - ☐ Professional resumes, certifications, and/or licenses (Professional, Personal or Planning Services Only)
 - ☐ Other supporting documentation
4. Because of the above facts and supporting documentation, the City of Austin exempts this procurement from Local Government Code Chapter 252 and intends to contract with:
- (Vendor Name): The University of North Texas for
- (Description of Procurement): Aquatic Macrophyte Restoration Project.
5. Check the contract type (one-time or multi-term) and fill in the dollar amount and term as applicable:
- ☐ This is a one-time request for \$ _____
- ☒ This is a multi-term contract request for 12 months (# months for base term) in the amount of \$50,000.00 with 2 x 12 month renewals (# of renewal options) for \$50,000.00 each for a total contract amount of \$150,000.00.

Recommended
Certification

Josie Archer
Originator

9/25/2018
Date

Approved
Certification

[Signature]
Department Director or designee

9/25/18
Date

N/A
Assistant City Manager / or designee
(procurement requiring Council approval)

Date

Purchasing Office
Review

Authorized Purchasing Office Staff

Date

Purchasing Office
Management Review

Purchasing Officer or designee
(If required due to signature authority level)

Date